Original Articles.

NOTES ON THE NEW COOLIDGE X-RAY TUBE.

By H. W. Van Allen, M.D., Springfield, Mass.

The ability of any mechanical device to be useful is limited to the ability of the weakest part to withstand the strain put upon it. When we are dependent upon such a mechanical device for medical deduction it is self-evident that the medical information is limited in the same way. It has been a well known fact to Roentgenologists for some time that the weakest part in our equipment has been the tube. The exciting apparatus has been gradually increased in efficiency until in the interruptless machine, as now made, we have electrical output enough to destroy the ordinary tube in a few seconds. The tube makers have tried to take care of this electrical bombardment by backing up the platinum target by large quantities of copper to absorb the heat generated. Again a step forward was the substitution of tungsten in the target for platinum. This was a valuable addition as the melting point of tungsten is some 2,000 degrees, Fahrenheit, higher than platinum; therefore it withstands the impact of the cathode ray much better. Here seemed to come the limit, however. The various makers claimed certain points of superiority but the advantages were minor and all tubes had the same limitation.

It has been left for Dr. W. D. Coolidge to solve the problem in a most efficient way. For two years past experimental work has been carried on which has resulted in a new type of tube dependent upon entirely new principles. While Dr. Coolidge does not believe the tube is beyond improvement he feels clinical experience is now needed to obtain from the actual workers practical suggestions. To this end a half dozen of these tubes have been placed in the x-ray laboratories of physicians.

Besides Dr. Coolidge's original article in the *Physical Review* many of the scientific journals have published extensive papers on this new tube from which the daily press has printed more or less distorted reports. My object in presenting this short paper is that the readers of the Journal may know from a medical standpoint what those of us who are actually using the tube are expecting.

In all tubes the x-ray is produced by the cathode stream striking the anode, or target, from which is given off the wave energy called the x-ray. This cathode stream must be excited by bombardment of the cathode. In the old tube these were positive ions carried across by the small quantity of contained air in the tube. It was the variations in the quantity, character and position of this remaining air that made the character of the tube so unstable. The heavy target absorbed the air only to give it off in action, when heated by the bombardment of the cathode stream. Thus a tube would never be found of the same character at different times. When one realizes that only one condition of the tube fits a given requirement and the tube is constantly changing the problem has been not to get the best radiograph but to get as good as such varying conditions will allow.

With the Coolidge tube all this is changed. In general shape it is the same as the old style. The vacuum is as perfect as can be made, a thousand times greater than the old type. This being the condition not even the highest tension current will pass from cathode to anode. To overcome this a filament of tungsten has been placed in the cathode, connected by two low tension insulated wires through the cathode stem to a storage battery. The whole is so placed as to be insulated for high tension currents from the ground. The high tension current is connected to either of the low tension wires so it may be passed along to the cathode, while the anode is connected to the other high tension terminal. Until the battery current is completed and the filament lighted, no high tension current will pass. When the filament is lighted, however, current passes freely, the electrons coming from the heated filament. The penetration of the tube is dependent upon the rapidity of the electric discharge from the filament. This discharge is controlled by the heat in the wire which can be varied by a rheostat introduced into the battery circuit, so at will we can change to any penetration by merely moving a rheostat handle. Moreover, we have no particles of air to come out of the heated target and change the conditions of the tube. We have no secondary rays to heat the glass and decrease the clearness of the shadow. A tube of this kind can run continuously with a current that would ruin the ordinary tube in half a minute. Consider then the tremendous output of such a tube for treatment work. Filters placed in the path of the Roentgen ray will take the emanations not desired in a given case and still there is abundant capacity remaining. This together with the cross-fire technique makes therapy of internal diseases equally efficacious to that of the body surface. With such an instrument in our hands we have an opportunity for exactness never before thought possible by the Roentgenologist. Radiographs for stereoscopic work may have exactly the same character. Particularly brilliant plates may be exactly duplicated in future cases, because the various elements involved in the operation have become susceptible of exact measurements and control. The one thing we have needed so badly has arrived, and in a form that seems to me particularly free from objectionable characteristics.

SOME TRAGIC ASPECTS OF WHOOPING-COUGH.*

BY PHILIP H. SYLVESTER, M. D., NEWTON, MASS.

THE death of a child from any cause is a tragedy—but we are liable to lose sight of that fact in the sudden, unexpected, or dramatic death of an unusual case. Whooping-cough with a mortality of approximately 7 per cent., and a toll of ten thousand in the United States annually[1], presents an appalling contrast to the layman's, and the average physician's, conception of its harmlessness.

To you, as pediatricians, it is hardly necessary for me to speak in detail of the pathology of the disease; the causes of death in our usual experience are briefly, exhaustion, pneumonia, bronchopneumonia, cardiac, and terminal tuberculosis. The cases which I am about to describe are of interest owing to their unusual type and an argument for an efficient treatment of, as well as prophylaxis against, the disease. Inasmuch as six of the eight cases to be reported were much alike I will save your time by describing only one of these.

CASE 1. Marian R. Age 2 years.

F. H. Third child of well parents; two older children well except for last stage of whooping-cough.

P. H. Full term, transverse position, delivered by version. Received an intra-capsular fracture of the left humerus which healed with no deformity. Was breast fed for nine months, then various mixtures. Did perfectly well. Has always seemed a well, normal child.

P. I. Has been having whooping-cough for the last two weeks; has not been very sick. Last night about midnight had an unusually severe paroxysm, followed by a convulsion, seemed very feverish immediately after; has been delirious ever since and has had seven convulsions, has been stiff most of the time.

P. E. August 15, 1912, 10° after onset.

Well developed and nourished child, unconscious, rather cyanotic, breathing labored, much mucus in trachea; anterior fontanelle closed; pupils equal and do not react, are slightly dilated, occasional divergent strabismus; jaws are clenched; throat is clear except for large tonsils; there are a few large glands in the neck; the lungs are full of coarse rales and ronchi, no dullness or modified breath sounds; heart sounds regular, rapid, no murmurs, heart not enlarged; abdomen held rigidly; no täche; genitals negative. Extremities, except the left arm, in moderate spasm all the time, occasionally becoming more rigid in extension. Left arm flaccid, but is moved occasionally with waving motion, no elbow jerk. Knee jerks not exaggerated. Koernig not tried. No Babinski. Temperature 106; pulse 160; respirations 40. Lumbar puncture 45 c. c. clear fluid, considerable pressure, no clot in 12 hours. Cells 12 per c. m. m., largely lymphocytes and endothelial. Culture, no organisms in 48 hours.

Diagnosis. Cerebral hemorrhage.

* Read at a meeting of the New England Pediatric Society, Dec. 12, 1913.

FURTHER NOTES ON THE CASE.

August 17. Temperature persists. Has had eighteen convulsions since last visit. Signs unchanged except for retraction of head and stiffness of neck. Lumbar puncture, 60 c. c. faintly cloudy fiuid, clot in two hours. Noguchi +. Cell count 300, many endothelial, few mononuclear, many polynuclear; smear, no organisms seen. Culture sterile after 48 hours.

August 20. Acute symptoms persist. Had four convulsions yesterday, none today. Is still unconscious. Cries a great deal. Refuses all nourishment. Looks very badly. Stiffness and retraction of neck more marked. Pronounced täche cérébrale. Left arm flaccid, no elbow jerk. Other extremities spastic but in more or less constant motion. Knee jerks not obtained. No Koernig. Babinski present both sides. Lumbar puncture, 65c.c. *turbid* fiuid. Cell count not done. Clot in one hour, heavy. Tube clears on standing with about half an inch of sediment of polynuclears. Noguchi not done. Smear, no organisms seen. Culture, many staphylococci in 24 hours.

August 24. Seems a little stronger; still unconscious. Not so restless. Less rigidity. Temperature has gradually come down to 100, pulse 120. Swallows a little milk when put in mouth with spoon. Rigidity of other extremities and flaccidity of left arm persist. Babinski present on both sides. Lumbar puncture, 35 c. c. slightly turbid. Noguchi +. Clot in one hour. Cell count, 1,000 per c.m.m., all polynuclears. Culture, many staphylococci in 24 hours.

Child gradually got better but was still unconscious and presented moderate meningeal symptoms on September 15, 1912, when by lumbar puncture 15 c. c. clear fluid was obtained. Cell count 40, all mono-nuclears. Culture sterile.

Child remained unconscious for about five months from the onset, during which time it was fed by nasal tube; then gradually began to notice, to take food voluntarily and to have more or less cöordinate actions.

It was seen again December 2, 1913, approximately a year and a half after the onset.

P. E. Poorly developed, fairly nourished. Seems fairly bright but is easily frightened. Mouth tends to remain open and the child drools constantly. Recognizes parents, brothers and neighbors and passing automobiles. Does not talk intelligibly, but indicates wants pretty clearly, and appears to understand when spoken to. It shows no paralysis although the left arm is soft, flabby, and a trifle smaller than the right; the elbow jerk is still absent and the child uses the arm very little but has all motions. Mother states that the child has eight to ten "contractions" in the arm daily; none noted during physical examination. Tries to walk when held up about as a child of ten or twelve months would do. Mentally is certainly not more advanced than the average child of two years.

CASE 2. Clarence E. Age 22 months.

F. H. Parents well. One brother has whooping-cough severely.

P. H. Full term, normal delivery, breast fed for three months, then various modifications of a proprietary food containing much starch and sugar. "Did fairly well." Has had frequent colds. Has

always been pale. Has been very slow in getting teeth. Does not walk. Talks very little.

P. I. Has been having whooping-cough (whooping) for two weeks; during the last week has had pretty severe paroxysms frequently; has vomited a good deal and has seemed a little feverish in the afternoons. Four days ago had a very severe paroxysm, followed by a convulsion lasting ten minutes, it is stated; has not seemed bright since.

Extremities have been stiff all the time but the left hand is frequently placed on the head. Has had a rectal temperature varying from 104 to 106 since shortly after the first convulsion. Yesterday and today the extremities have not been so stiff but have twitched a great deal. The child has looked badly and appears as if in pain, and has put the hand to left ear. Was seen by me to determine the question of otitis media.

P. E. Pale, under-sized child, fairly nourished, unconscious, a little cyanotic. Anterior fontanelle half an inch in diameter seems tense but not definitely bulging. Head is square. Ears negative. Eyes divergent, pupils widely dilated, do not react. Head retracted. Neck rigid. Throat clear. Six upper teeth, four lower, chalky.

Lungs full of coarse rales; much mucus in trachea; breathing is shallow and irregular.

Heart not enlarged; sounds very weak, very rapid, no murmurs made out.

Abdomen lax. Liver large, 2 cm. below costal border. Spleen not felt. No tenderness. Marked täche cérébrale.

Knee jerks not obtained. Koernig on right, Babinski on both sides. Neck sign present. Extremities intermittently spastic with fingers and toes in position of tetany. Epiphyses of wrists and ankles much enlarged. Temperature 104°, pulse about 180, respirations 40.

Lumbar puncture, 40 cc. cloudy fluid under very much pressure. Clot in one-half hour. Cell count more than 1,000, all polynuclears. Smear shows occasional extra-cellular diplococcus resembling pneumococcus. Culture unfortunately thrown away. Child died five hours after lumbar puncture.

CASE 3. Richard D. Age 6½ years.

F. H. Only child. Parents well.

P. H. Full term, normal delivery, breast fed one year. Always well and strong up to six months ago when he had scarlet fever mildly, no kidney involvement. Has been well since, although "nervous" at times.

P. I. Has had pertussis for five weeks; has vomited a great deal but has felt pretty well and has been up most of the time. Paroxysms have been growing more severe for the last two weeks. Yesterday afternoon, after a severe paroxysm fell down and stayed "blue." Has been unconscious since; has been very feverish and delirious; no voluntary motions except that he swallows a great deal. Temperature was 103 by axilla this morning.

P. E. 1 P. M. 20 hours after the initial convulsion.

Well developed. Cyanotic, spastic in all extremities. Left pupil dilated, neither react. Cheyne-Stokes respirations. Lungs full of large, rattling rales.

Heart not enlarged. Sounds very rapid; no murmurs made out. Marked täche cérébrale.

Abdominal wall rigid; no masses or apparent tenderness.

Knee jerks very much increased. Babinski present on both sides. Koernig not tried. Rectal temperature 105°, pulse 160, respirations 30.

Lumbar puncture, 45 cc. clear fluid, no clot in 12 hours. Noguchi not increased. Cell count 10, all lymphocytes. Smear, no organisms. Culture, no organisms after 48 hours.

Following lumbar puncture the child relaxed greatly; breathing became more regular and color improved. Spasticity and convulsive movements began again after about eight hours and continued until the child's death on the following day.

The other five cases of this type were from 18 months to six years old. Within the second to the fifth week of the paroxysmal stage all had a convulsion, or something like it immediately following a severe paroxysm. All had a very high temperature,—spasticity rather than paralysis. All had an increased amount of normal, sterile spinal fluid, and all died in from 10 to 48 hours of the initial convulsion.

It may be fairly assumed that all of these 8 cases were dependent, at the start, on a similar lesion, in that all presented, at the start, evidence of a diffuse process or processes in the brain and meninges. It seems to me that these symptoms are best interpreted as meaning high intra-cranial pressure, due to oedema or hemorrhage. As to oedema,—it is inconceivable to me that such a train of symptoms can come without warning, practically out of a clear sky. As to hemorrhage,—on the other hand,— the explosive character of the onset, during or immediately after a violent paroxysm, seems particularly consistent with hemorrhage,—a hemorrhage so large and producing so much pressure, that most of the focal symptoms were obscured.

In the first case it seems reasonable to assume that the case was one of hemorrhage at the start, the clot later becoming infected and producing meningitis, possibly encephalitis as well.

In the second case,—of course all that I found was a meningitis, presumably due to the pneumococcus, but the history and onset were so suggestive that I have no doubt that a cerebral hemorrhage was at the bottom of it.

It would be interesting to see what proportion of these cases become infected and have meningitis, if they live long enough.

CONCLUSION.

Here, then, are eight tragedies; seven cases dying immediately, one living but requiring unremitting care for a year and a half, and even now presenting no great promise of physical or mental development. Let us remember, however, that these are only eight—that all of the ten thousand deaths from this disease last year were just as surely tragedies; that a percentage of them was preventable by prophylaxis, and that another percentage—for surely there must have been a great many cases similar to those reported here—could have been prevented by appropriate treatment.

SUMMARY.

1. Certain cases of whooping-cough have symptoms of intra-cranial pressure, best explained on the ground of a cerebral hemorrhage.
2. The hemorrhage appears to be dependent upon the stress of a severe paroxysm.
3. The symptoms of hemorrhage in these cases pionted to lesions other than middle meningeal and were surprisingly uniform in the
(a.) Initial convulsion.
(b.) Immediate rise in temperature to a high degree.
(c.) Cyanosis.
(d.) Spasticity rather than paralysis.
4. This type of cases emphasizes the importance of prophylaxis.
5. Treatment should be directed toward at least reducing the severity of the paroxysms.

NEUROLOGICAL SOCIAL SERVICE, MASSACHUSETTS GENERAL HOSPITAL

BY MARGHERITA RYTHER, BOSTON,

Social Service Worker, Neurological Department.

INTRODUCTORY STATEMENT.

FOR seven years, under the auspices of the Social Service Department of the Massachusetts General Hospital, a worker has had charge of such cases in the Neurological Department as needed attention. The general result of this work under the immediate charge of Miss Edith Burleigh so far justified itself that it was thought desirable about a year ago (Dec., 1912) to make the relation between the Neurological Department and the Social Service Department still more intimate and presumably more efficient by having a social worker actually in the clinic, instead of at a distance, as the previous arrangement has been. Miss Margherita Ryther, Miss Burleigh's successor and former assistant, was appointed to this position and since then has had her desk in one of the rooms of the neurological out-patient department. She has thereby been brought into the closest possible relation with the actual practical work of the clinic. This has unquestionably resulted in an increase of efficiency in the treatment of patients, which it is always desirable to remember is the main object for which the clinic exists.

The significance of such an apparently trifling step as placing a social worker in immediate relation to the actual routine of a clinic is far-reaching. Wherever it has been attempted, so far as I am aware, it has met with success. It is certainly correct in principle unless the whole social service idea is wrong and that even the original doubters will not now be likely to admit. The demand for broad-minded, rational and honest treatment which Dr. R. C. Cabot has done much to foster has necessitated a broadening of the therapeutic outlook which finds expression in various ways but in none more definitely than in the closer alliance between bodily and mental conditions. A neurological clinic naturally offers peculiar opportunities for the development of such study as I believe a reading of the accompanying report will show. The growing conviction that many of the so-called functional disorders of the nervous system, at times regarded lightly by the physician, are of the utmost significance to their victims and to society at large, is being met by an adequate coöperation between medicine as represented by the doctor and external conditions as represented by the social worker. The time is rapidly approaching, if not already here, when such coöperation will be regarded as having passed the experimental stage and become established as a necessity of a well-ordered clinic. E. W. TAYLOR, M.D.

REPORT.

It is now nearing the end of the year since the Social Service Department was asked to transfer the social worker from the general department into the Nerve Clinic, and the results of the experiment are both encouraging and instructive. Through the closer relationship of doctor and social worker there is being developed a broader knowledge of their respective fields and a consciousness of the interdependence of the medical and social problems. This mutual understanding has resulted in a more vital coöperation.

There have been assisted by social service 315 patients (not counting the "clinical cases"—those not having a social record.) One hundred and twenty-seven of these are "new" and 188 are "old"; the number of new cases, being materially larger than in previous years. These totals of cases show only a part of the work done, since it has been necessary to decline several new cases after preliminary investigation and consequently these cases do not appear in either group, the patients recorded as "new" being only those of whom records were made. These new cases, of which 87 were referred by the clinic physicians and 40 by outside social agencies, were selected because of their urgency and need for investigation and "follow-up" work, and may be grouped under the following six headings:

1. Social investigation before making plans for disposition and treatment.
2. Social investigation before diagnosis is made.
3. Social study to supplement physician's treatment.
4. To get work.
5. Free treatment.
6. Miscellaneous.
7. Steering.

While the social treatment for each of these groups is dependent upon the results of the so-

cial investigation, the type and extent of the investigation must necessarily be determined by the need of the individual case. In general, however, the social investigation and treatment of these various groups may be considered in the following ways:

1. *Social investigation before making plans for disposition and treatment.*—Arrangements made for institutional, hospital, convalescent, vacation and suitable home care; work secured; free treatment.

The majority of patients coming under this group are suffering from organic nerve disease, and need social assistance in arranging for their admissions to the various state institutions, including schools for the feeble-minded, the insane hospitals, the epileptic colony, the state infirmary, the city almshouse, private homes for chronic invalids, small private hospitals, etc. A number need social supervision in their homes: *i.e.* instruction in hygiene, and "follow-up" work—oversight in seeing that they return to the clinic for treatment. Frequently the patients need financial help and the local relief agencies or relatives are called upon. There were 46 cases coming under this heading. These were divided as follows:

A. Diagnoses.		
(1) Neurosis		14
a. Epilepsy	7	
b. Chorea	4	
c. Occupational neurosis	2	
d. Gastric neurosis	1	
(2) Psychoneurosis*		4
(3) Organic cord disease		4
(4) Organic brain disease		2
(5) Psychosis and mental defect		14
a. Psychosis	6	
b. Mental defect	8	
(6) Unclassified (diseases other than nerve)		8
a. Arteriosclerosis	3	
b. Cephalalgia	1	
c. Debility	2	
d. Alcoholism	1	
e. Morphinism	1	
Total		46

B. According to Disposition.	
(1) Institutional and hospital care	22
(2) Sanatorium and convalescent	5
(3) Vacations	1
(4) Work	1
(5) Transfer to other social agencies	4
(6) Supervision in the home	12
(7) Purpose not accomplished	1
Total	46

2. *Social investigation before diagnosis is made.*—An extensive social investigation of the patient's inheritance, environmental conditions and personal history, requiring interviews with members of the family, school teachers, family physicians, employers and patient (if he is responsible enough to talk coherently).

Of this group the patients referred are usually those who show mental symptoms during the clinical examination and the physicians wish a report of facts from the family or someone who knows the patient well enough to report upon his history and behavior. The disposition in these cases is similar to that of those under No. 1, according to diagnosis made, except that in these cases the family and relatives are instructed more in detail as to the nature of the patient's illness and how they may assist in his treatment. If the patient is not proven to be suffering from insanity the socio-therapy method of treatment is frequently used (See under group 3.) There were eight cases under this heading.

A. Diagnosis.		
(1) Psychoneurosis		3
(2) Psychosis and mental defect		3
(3) Unclassified (diseases other than nerve)		2
a. Debility	1	
b. Alcoholism	1	
		8

B. Treatment	
(1) Insane hospital	1
(2) Sanatorium	1
(3) Supervision in home	1
(4) Transfer to care of other social agencies	3
(5) Transfer to care of family	2
	8

3. *Social study to supplement physicians' treatment.*—Socio-therapy—an analysis of the patient's environmental conditions, hereditary influences and temperamental tendencies as; (1) a basis for treatment; (2) as a curative influence. In the study and treatment of the psychoneuroses the social histories and conditions play an important part.

(1) The physicians in the clinic have not the time to study the causal social conditions contributing to the nervous invalidism of these patients, and the information secured is of value to them in rounding out their clinical examinations and making it possible to advise the best treatment. The many cases demanding their attention makes it necessary, in general, for them to confine their efforts to the physiological disturbances of the nervous system. The doctor in his private practice in treating one of these cases knows that frequently the nervous disorders may be traced to emotional conflicts which are often the outcome of faulty environmental conditions. He would not advise treatment without a knowledge of the patient's resources, social, financial or otherwise, but it takes time to secure these facts, and it is just here that the social worker in the clinic is useful, since by getting from the patient the needed data she saves the physician

* The term "psychoneurosis" is used in this report as a general term, to indicate neurotic states, predominantly mental in character, but not reaching the point of irresponsibility.

much time and the foundation is laid for good medical and social team-work, which is of decidedly greater value to the patient than either alone.

(2) The analysis is used secondarily as a medium for social and psychological treatment, the benefit to the patient being a clearer understanding of what nervousness means, the many causes contributing to nervous breakdown, and the means available for readjustment. He is made to see himself and his environmental conditions from an objective point of view. He learns to understand himself and his relation to others; he is enabled to review his life's development; he is made to face his faulty traits of character and unfortunate inherited tendencies. He sees not only his weak but also his good qualities and through this increasing knowledge and release from former self-ignorance the means and opportunity to reëstablish himself is provided. This breaking down of old habits, false beliefs, etc., cannot be accomplished at once. Self-knowledge is only the first step towards gaining emotional poise, but the light thrown upon the patient's life through the unravelling of his social background is the foundation of ultimate recovery. Through the social study the patient is awakened to his responsibilities to himself and others. His confidence in the worker and doctor being established he is started upon a course of mental hygiene consisting sometimes of months of patient reiteration of the need for daily practice of healthful habits. The social worker continues to assist with the patient's treatment through interviews and home visits and gradually becomes the bond between the patient and the doctor. Furthermore she follows the case between visits to the hospital and is thus able to have ready for the physician at each visit of the patient much information of value to him in his conduct of the case.

Convalescent and sanatorium treatment is arranged for in some cases and work secured in others. Not infrequently the treatment of these patients includes all the above care. There were 19 patients referred under this category.

A. Diagnoses.

(1) Neurosis	5
a. ? Epilepsy	3
b. Occupational neurosis	2
(2) Psychoneurosis	13
(3) Debility	1

B. Treatment.

(1) Sociotherapy	19
(2) Sanatorium	3
(3) Convalescent	2
(4) Change of environment, care away from home	1
(5) Change of work	2
(6) Social oversight	10
(7) Assistance refused	1
	19

C. Results.

(1) Improved	15
(2) Poor results	3
(3) Unknown	1
	19

4. *To get work.*—Three patients were referred for work because of its therapeutic value. The nature of their illnesses and condition made it difficult for them to secure employment from an agency.

Diagnoses.

(1) Organic peripheral disease	1
(2) Organic brain disease	1
(3) Psychoneurosis	1
	3

5. *Free treatment.*—Free treatment may range from securing admission to the clinic to raising money for an expensive apparatus. Nine patients were referred in this group.

A. Diagnoses.

(1) Organic cord disease	3
(2) Organic brain disease	5
(3) Unclassified	1
	9

B. Treatment.

(1) Salvarsanized serum	4
This requires raising sometimes $10-$20 for course of treatment.	
(2) Salvarsan	1
(3) Medicine and admission	2
(4) Apparatus, costing $20	1
(5) Hydrotherapy	1
	9

6. *Miscellaneous.*—A patient, suffering from tabes, was referred because the physician felt the man had been unfairly deprived of his insurance policy. The investigation proved otherwise and the patient was finally convinced that he had been treated leniently under the circumstances.

Another patient, a young married woman, having epilepsy, was referred because she was greatly disturbed over her mother whom she felt was being neglected in a home for aged where her family had paid $500 for her maintenance for life. The conditions were investigated and the home found to be one of questionable reputation. As the patient's brother was satisfied with the care his mother was having and refused to take legal steps the matter was dropped. This case has required much social attention as the patient's environmental conditions were poor and in need of adjustment.

7. *Steering.*—Any outside social agency may send a patient to the Social Service Department and be assured that the patient will be properly

admitted to the hospital, steered to the right physician, examined, and that the agent will receive the doctor's report as to the diagnosis made and his advice as to treatment. This coöperation between the medical social worker and the outside agency is of mutual benefit. Before the patient is referred the outside agency forwards a brief social history of the patient, and this is given to the physician before the patient is examined, and while the outside agency carries the entire social responsibility of the case. The social service worker reports upon the condition of the patient from time to time—whether he is reporting to the clinic as advised, etc.; and secures free admission and medicines if required. In the cases passing through the Neurological Department there are many instances where the outside agency must be instructed as to the specific social information needed, particularly in cases where there is a question of the patient's mental condition. There were 40 cases coming under group 7.

A. Diagnoses.		
(1) Organic peripheral disease		2
(2) Organic cord disease		10
a. Tabes	7	
b. Ataxia paraplegia	2	
c. Old poliomyelitis	1	
	8	
(4) Psychoses and mental defect		8
a. Psychoses	4	
b. Mental defects	4	
	8	
(5) Unclassified (other than nerve)		12
a. Alcoholism	6	
b. Debility	2	
c. Syphilis	1	
d. Arteriosclerosis	1	
e. Reserved	2	
	12	
(6) Psychoneuroses		2
(7) Neuroses		7
a. Epilepsy	3	
b. Chorea	2	
		40
B. Treatment.		
(1) Free treatment		40
a. Admission	40	
b. Medicine	40	
c. Hydrotherapy	1	
(2) Arrangements for admissions to institutions		2
(3) Steering		40

The group designated as "old" embraces the patients who had been referred to us during previous years and with whom we are still in touch in consequence of their need of advice and help. These cases have required much attention, as their problems have frequently needed close observation and social supervision through periods extending into months. The social worker, once a friend, is called upon over and over again, for the intimate relation formed at the time of the patient's first urgent need is a tie not easily severed. The patients' knowledge of life and affairs is meagre and often confusing and their outlook is so narrow that not infrequently their future well-being depends upon their having intelligent advice on the many difficulties surrounding them, domestic and otherwise. Sometimes the solution is simple, as for instance: what may seem to them a complex family situation is in reality only the outcome of petty misunderstandings and can easily be solved by tactful measures. To expand the vision of these patients is the social worker's duty, and in her unique position and relation to them she has an unusual opportunity to teach the principles of a useful and simple philosophy of life. Her range of helpfulness extends from a smile of friendly good cheer to hours or days of extensive labor, often required before any adequate solution of the specific problem can be evolved.

IS SANATORIUM TREATMENT WORTH WHILE?

By Gertrude L. Farmer, Boston.

Social Service Department, Out-Patient Department, Massachusetts General Hospital, Boston.

[A study of 419 phthisical patients referred during a period of six years, from January 1, 1906, to January 1, 1912, to the Social Service Department of the Massachusetts General Hospital, and sent to the State Sanatoria.]

PURPOSE.

Pulmonary tuberculosis has been the medical diagnosis of the largest group of patients referred to this department. In the first annual report of our work, 1905-1906, I wrote: "There is no other place (than Rutland) in Massachusetts where a patient can get, for four dollars a week, a dry, clear climate, free from the damp and dust of the town, expert medical supervision, plenty of good food, the discipline and psychic contagion of a large institution where everyone in sight is following the treatment. . . so hard to carry out alone at home." This seems to me to be equally true today, and we continue to try and secure this treatment for our patients. We thought it was time to make some general test of its efficacy.

At a time when the effectiveness and economy of state sanatorium care is much under discussion, we have hoped to throw a little light on the subject. Massachusetts has committed her-

self to this policy by building three other institutions in addition to the one already in existence.

We make no claim to the possibility of drawing any general conclusions from our data. The numbers found to be available are too small. This is simply a limited study of 419 individuals. The principal end we have had in view is an answer to the questions: How many of these patients are now living normal lives? How many are dragging out an existence with one foot in the grave?

METHODS.

Tracing Patients. In beginning our study we sent a letter to each patient. When no reply was received we tried to trace through relatives, private agencies, and anti-tuberculosis societies, official agencies, chiefly boards of health and town clerks. The boards of health were valuable when they employed a visiting nurse. In the case of Boston patients the out-patient department of the Municipal Hospital for Consumption and the Bureau for the Confidential Exchange of Information were of great assistance.

Difficulties in Tracing. Where other resources failed, we visited the last address, and followed up clues, until some information was obtained, or the quest proved hopeless.

The attempt to get in touch with these patients involved a great deal of work. Many of them had been seen only once. Many of them, the majority, had not been heard of since they left the sanatorium. Almost all were poor working people, who change their residence frequently, and leave few clues behind. Some have married, and in the case of women this tends to cover their tracks. Some have left the country. Many have foreign names, the spelling of which in English is problematical. Our early records contain less information than the later ones. We have no regular system of follow-up work and no facilities for it, but since 1910 we have kept a card catalogue of sanatorium cases with this study in view.

That out of a total of 419, only 20 patients remain quite untraced is owing to the untiring efforts of the workers, both paid and unpaid, assisting in this study.

GENERAL PLAN OF STUDY.

Period Chosen.—The Social Service Department started in October, 1905. When we began this study we decided to consider those patients who were admitted to and discharged from one of the state sanatoria, during the years from Jan. 1, 1906, to Jan. 1, 1912, and only those to whose going our efforts had contributed.

Why the Number Available is Small. During the six years out of a total of 8224 patients referred to us, 2564, or 31.1+%, had a diagnosis of pulmonary tuberculosis. That of these we only succeeded in obtaining state sanatorium care for 419, or 16.3-+%, is due to a variety of reasons. Up to September, 1909, Massachusetts had only one state sanatorium, that at Rutland. In attempting to get a patient admitted, more difficulty was experienced than is found today. Rutland has tried to give the preference to the incipient, favorable case. Citizenship was required, and the question of finances had to be gone into. Our older records show how often a patient was held up "for lack of funds." When a patient is now unable to pay, the matter may be left to the State Board of Charity. Since 1910 we have had four state sanatoria, all under a special board of trustees, and three of them admitting all types of cases. Questions of citizenship and settlement have been much modified, and are no longer bars against admission, except occasionally in the case of an unsettled alien with an obviously poor prognosis. In cases where admission was possible, we often failed to persuade patients to go. Lack of vacancies made the interval between application and admission long, patients became discouraged, lost ground, and so were unsuitable for admission, or made other plans. These last two reasons hold good today.

The 2145, or 83.7+%, who did not go to the sanatoria were referred to tuberculosis classes, chronic hospitals, homes for incurables, anti-tuberculosis societies, etc.

We have excluded from our regular tabulation 96 patients, grouped as follows: Not considered,* 50; died at sanatorium, 21; no phthisis, 5; untraced, 20. Separate tabulation has been made of the first three groups.

Plan of Tabulation. Taking the remaining 323 patients we have grouped them according to stage on admission, noting age, length of stay, condition on discharge, and present condition. A special effort has been made to get the stage on admission and condition on discharge from the sanatorium, as it differs somewhat from that found in the hospital records.

As this is an economic study we have not entered into any discussion as to medical terms and classifications. The sanatoria have made use of the classification of "incipient," "moderately advanced," and "advanced," as given by the National Association for the Study and Prevention of Tuberculosis. They classify the discharged patients more or less according to the same authorities, as "apparently cured," "arrested," "improved," "unimproved," "dead," with the occasional use of subheadings, such as "progressive." Within a few months they have discontinued the use of the term "apparently cured" and use the much broader one of "arrested." We have used the latter term to cover all cases discharged as "apparently cured" and "arrested."

Present Condition. We have directed our attention chiefly to finding out: (*a*) the number of years that these patients have lived since

* *i.e.* remained too short a time at the Sanatorium to be instructive from the point of view of results.

discharge, and (*b*) their present condition. In the majority of cases the period noted is the winter of 1912-1913. We have classified them as "well," "alive," "dead," making use of only three terms in order to simplify the tabulation, and making these cover the following points:—

"*Well.*" Means also working or able to work, that is, the ability to lead a normal life. In the case of women we consider the occupation of housewife as a normal work condition.

"*Alive.*" Includes those too ill to work; those working but ill; those readmitted to the sanatorium and there at the time of report; those in other institutions for the tubercular; those about whom we have been unable to get any other information except that they are alive. Some of the last may be "well," which would alter our percentages.

"*Dead.*" In the case of those who have died, "present condition" means the date of death in whatever year since discharge it falls.

Medical Condition. We have not attempted to note the medical condition of these patients except as it is indicated by ability to work, and in the majority of cases this "ability" was their own opinion. To obtain an expert examination of the chest and a report on sputum would have involved great difficulties, and in many cases would have been impossible. Unless reliable it would not have been of any value. We got a few patients into the hospital for examination, but not in sufficient numbers to be of statistical benefit.

THE "NOT CONSIDERED" PATIENTS.

The state sanatoria classify as "not considered" those patients who stay a month or less. Occasionally the period has been six weeks or less. We have included under this heading those who stayed a month or less, and also some who stayed a somewhat longer period, but were discharged without a definite report on their condition.

Of the 419 patients there were 50 "not considered," or 11.9+%. The stages on admission were: incipient, 23; moderately advanced, 13; advanced, 14.

AGES ON ADMISSION (all stages).

5-10 years	0 patients
11-20 years	8 patients
21-30 years	21 patients
31-40 years	16 patients
41-50 years	5 patients
51+ years	0 patients

LENGTH OF STAY.

12 stayed 1 week or less.
19 stayed 2-3 weeks.
19 stayed 4-7 weeks.

Of the 50 patients in this group, 9, or 18%, had some complication.

STAGE I.

1 Alcoholic.	Well after 3 years.
1 Pregnancy.	Well after 6 years.
2 Neurasthenic.	1 well after 6 years. 1 alive after 5 years.
1 Old tuberculosis of knee.	Well after 6 years.

STAGE II.

1 Syphilis, morphine habitué.	Well after 2 yrs.
1 Neurasthenic.	Well after 1 year.
1 Tubercular laryngitis.	Died after 1 year.

STAGE III.

1 Tuberculosis of knee.	Died after 2 years.

Of the 23 in Stage I, 17 patients are well, 4 alive, 2 dead.

Of the 13 in Stage II, 7 patients are well, 3 alive, 3 dead.

Of the 14 in Stage III, 2 patients are well, 2 alive, 10 dead.

Totals (all stages) well, 26 patients, or 52%; alive, 9, or 18%; dead, 15, or 30%.

It will be seen that the "not considered" patients make a very good showing. Of the 23 patients admitted in the incipient stage 17 are well: 2 after 2 years, 3 after 3 years, 1 after 4 years, 1 after 5 years, 9 after 6 years, 1 after 7 years.

PRESENT CONDITION AND TIME SINCE DISCHARGE OF THE 50 "NOT CONSIDERED" PATIENTS.

	Stage I.			Stage II.			Stage III.		
	Well.	Alive.	Dead.	Well.	Alive.	Dead.	Well.	Alive.	Dead.
6 mos. or less			1						3
1 year				2		2	1		1
2 years	2		1		3		1	1	4
3 years	3			3		1		1	2
4 years	1								
5 years	1	2		2					
6 years	9	2							
7 years	1								
	17	4	2	7	3	3	2	2	10

Of the 13 admitted in the moderately advanced stage, 7 are well: 2 after 1 year, 3 after 3 years, 2 after 5 years.

These results will appeal to those who believe that the most desirable function for a state sanatorium is that of an educative establishment. If this opinion is well founded, it is fair to assume that some of these short-stay patients carried away an object lesson of great value to them in after life.

Reasons for Discharge. We made a special effort to discover the reasons for the premature discharge of these patients as we felt it would be interesting to know what induced 50 people, out of a small group, to give up what might have been their one chance of recovery from a disabling sickness. In most cases we obtained the information from the sanatorium records. We have classified these reasons as the following:

1. Insufficient evidence of tuberculosis 3
2. Too far advanced 1
3. Pregnant 1
4. Misconduct 2
5. Lack of funds 1
6. Neurasthenic 3
7. Came for education 2
8. To follow treatment at home 3
9. Dissatisfied with sanatorium 8
10. Objected to treatment 4
11. Homesick 5
12. Home or business conditions 6
13. Discouraged 1
14. Left of own accord, no reason given 3

Out of the 50, therefore, we obtained some definite information in 43 cases.

In 7 cases we could obtain no information at all. The 2 patients under 2 and 5 would not be discharged today. The 5 under 7 and 8 might be classified together as "educative cases." Nos. 11 and 12 suggest that social work in connection with the patient's home environment might have induced these 11 patients to continue their treatment.

"NO PHTHISIS" PATIENTS.

Of the 419 patients who were admitted to the sanatorium, 5, or 1.4%, were discharged as having no phthisis. These patients were all admitted as in the incipient stage. Three had other complications as follows: Exophthalmic goitre, 1; sarcoma of lung, 1; iritis (tubercular), 1. In 2 no other diagnosis was noted.

Present Condition of the 5 "No Phthisis" Patients. One died at the sanatorium, 3 are well after 2-6 years, 1 is alive after 6 years (in an institution, with advanced phthisis).

"DIED AT THE SANATORIUM."

Out of the total of 419 patients admitted to the sanatoria 21, or 5%, died before discharge. Of these 5 went to Rutland, 11 to North Reading, 3 to Lakeville, 2 to Westfield.

Stage on Admission. Moderately advanced, 7; advanced, 14.

Length of Stay. Eleven stayed 3 months or less; 4, 3-6 months; 6, 6 months or 1 year.

Complications. Of the 21 patients in this group, 8, or 38+%, had some complication other than phthisis. These were as follows: Tuberculosis of larynx, 3; of tibia, 1; of wrist and epididymis, 1; of spine, 1; of genito-urinary tract, 1; heart disease, 1.

It is to be noted that 14 of the 21 patients were admitted in Stage III. All but one had tuberculosis in another part of the body. About one-half died three months or less after admission.

AN ANALYSIS OF 323 PATIENTS DISCHARGED ALIVE FROM THE STATE SANATORIA DURING THE YEARS 1906, 1907, 1908, 1909, 1910, 1911.

The 323 patients were divided as follows on admission: Incipient, 117, or 36.2+%; moderately advanced, 147, or 45.5+%; advanced, 59, or 18.2+%. As out of a total of 323, 308 went to Rutland, while North Reading had only 60, Lakeville 39 and Westfield 12, it might have been expected that this would prove to be a study of incipient cases. The fact, however, that there were nearly 10% more of the moderately advanced helps to bear out the claim, that of all those who apply for admission to Rutland, only 33% have been in the early stages of the disease.

Living and Dead. (Total of all stages, 1912-1913.) Living, 220, or 68.1+% (106, or 90%, incipient; 98, or 66.5+%, moderately advanced; 16, or 26.9+%, advanced.) Dead, 103, or 31.8+% (11, or 9.4+%, incipient; 49 or 33.3+%, moderately advanced; 43, or 72.8+%, advanced).

An analysis of the above is given in Charts I, II and III and in the text.

AGE ON ADMISSION OF THE 323 PATIENTS.

Incipient. Total, 117 patients. 5-10 years, 0 patients; 11-20 years, 39 patients, or 33.3%; 21-30 years, 46 patients, or 39.3%; 31-40 years, 23 patients, or 19.6% (11-40 years equals 92.2%); 41-50 years, 8 patients, or 6.8%; 50 and over, 1 patient, or .85%.

Moderately Advanced. Total, 147 patients. 5-10 years, 1 patient, or .68%; 11-20 years, 28 patients, or 19.0%; 21-30 years, 61 patients, or 41.4%; 31-40 years, 38 patients, or 25.8% (11-40

years equals 86.2%); 41-50 years, 17 patients, or 11.5%; 51 and over, 2 patients, or 1.3%.

Advanced. Total, 59 patients. 5-10 years, 0 patients; 11-20 years, 1 patient, or 1.6%; 21-30 years, 28 patients, or 47.4%; 31-40 years, 19 patients, or 32.2%; 41-50 years, 6 patients, or 10.1% (21-50 years equals 89.7%); 50 and over, 5 patients, or 8.4%.

The numbers studied are too small to render any general conclusions valuable. Certain points may be noted.

Of all stages we have had only one patient in the first decade. Up to a year or so ago there was no sanatorium in Massachusetts to which children could be sent, and care for these has always constituted one of our most difficult problems. Rutland has not admitted patients under fifteen years of age. At present such children can be sent to Westfield.

Taking the sixth decade we have in all stages only eight patients. Rutland did not encourage admission over forty-five years of age.

The greatest number in the incipient and moderately advanced falls within the second, third and fourth decades. In the incipient it is 92.2+%. In the moderately advanced, 86.2+%. The maximum in both stages is in the third decade. In the incipient this is 46 cases, or 39.3+%. In the moderately advanced, 61 cases, or 41.4+%. In the advanced 89.7+% falls within the third, fourth and fifth decades, while, as in the other stages, the maximum, 28 cases, or 47.4+% is in the third decade. But the whole number of the advanced is only 59.

It will be seen that the age incidence in the incipient and moderately advanced stages agrees with the accepted theory that active phthisis is most common in the young adult, but that mechanical reasons influenced the numbers in the first, fifth and sixth decades.

LENGTH OF STAY.

The 323 patients stayed at the sanatorium as follows:—

The Incipient; 117 patients stayed a total of 2477 weeks. Average stay for each patient, 5¼ months; 35 patients stayed 3 months or less; 54, 3-6 months; 22, 6 months to 1 year; 6, 1 year or more.

Moderately Advanced; 147 patients stayed a total of 4081 weeks. Average stay for each patient, 6¾ months; 28 patients stayed 3 months or less; 47, 3-6 months; 64, 6 months to 1 year; 8, 1 year or more.

Advanced; 59 patients stayed a total of 1552 weeks. Average stay for each patient, 6½ months; 16 patients stayed 3 months or less; 22, 3-6 months; 16, 6 months to 1 year; 5, 1 year or more.

The average length of stay for all patients was about 6 months; 35, or 29.9+%, of the incipient patients stayed 3 months or less; 54, or 46.1+%, stayed from 3 to 6 months; 28, or 19.+%, of the moderately advanced stayed 3 months or less; 47, or 31.9%, stayed 3 to 6 months.

It is evident that, according to the generally accepted theory as to the length of time necessary to arrest the disease, the length of stay of these patients was too short. The fact that, notwithstanding this brief period of treatment our ultimate results are so good may be due partly to the fact that in the majority of cases, and for reasons given above, we were dealing with fairly favorable cases. Our numbers also were small. Any other conclusion would be dangerous.

So far as I know, there is no fixed period of stay required at the Massachusetts state sanatoria. I have known a patient discharged "arrested," and "with advice," after two months; another discharged "improved," and "against advice," after a year.

EXPLANATION OF CHARTS.

To show the ultimate result of our study, we have grouped the 323 patients in charts.

Chart I gives the number discharged as "arrested," "improved," "not improved," arranged according to the three stages on admission.

Chart II gives the present condition under our classification of "well," "alive," "dead." It is arranged according to the three stages on admission, and showing the numbers under each classification at different periods since discharge varying from six months to seven years.

Chart III includes Charts I and II, giving present condition under "well," "alive," "dead," in relation to the condition of discharge, and showing the numbers in certain periods of time since discharge.

DETAILS OF CHART I.

In the incipient group the largest number, 84, or 71.7%, were discharged arrested. This is 57.5% of the entire number discharged arrested, which agrees with the accepted belief as to the desirability of admission in the incipient stage. It is all the more striking when we consider that the majority of these stayed an average of six months.

In the moderately advanced group the largest number, 75, or 51.+%, were discharged improved. This is also 51.+% of the entire number discharged improved. It would seem that a longer residence than the given average of six and three-fourths months might have put many of these under "arrested."

In the advanced group the largest number, 39, or 66.1%, is also discharged improved. The largest number of the entire number discharged not improved comes in this group, 17, or 53.1%.

DETAILS OF CHART II.

"*Present Condition*" is the time when the report of the patient was received. In most cases it was February, 1913, but reports were received from December, 1912, up to April, 1913, and in a few cases, difficult to trace, up to November, 1913. In case of death, "present condition" is the date of death.

Time Since Discharge. In reckoning the time since discharge any part of a year under six months was not counted. Over six months was counted as one year.

Re-admissions. In case patients were admitted more than once the stage of the first admission was taken and the condition on the last discharge, excluding any admissions or discharges which came outside of the given six-year period which the study covered.

Present Condition for total of all stages: Well, 150 patients, or 46.4%; alive, 70, or 21.6%; dead, 103, or 32.1%.

Incipient Group. Of the 117 patients, 82, or 70.%, are "well"; 24, or 20.5%, are "alive"; 11, or 9.4%, are "dead."

Of the 82 patients who are "well," 3 have been discharged 1 year; 21, 2 years; 10, 3 years; 10, 4 years; 19, 5 years; 18, 6 years; 1, 7 years.

The largest numbers have been discharged 2 years (21 patients) and 5 years (19 patients).

Of the 24 patients who are "alive," 3 have been discharged 1 year; 8, 2 years; 2, 3 years; 2, 4 years, 7, 5 years; 2, 6 years.

The largest numbers have been discharged 2 years (8 patients), and 5 years (7 patients), as in group "well." Of the "alive," 10 patients are working, 2 are in hospitals, 6 are known to be "alive" but no further information obtained.

Of the 11 patients who have died, 2 lived 6 months or less after discharge; 4, 1 year; 1, 2 years; 1, 3 years; 2, 4 years; 1, 5 years.

Moderately Advanced Group. Of the 147 patients, 61, or 41.4%, are "well"; 37, or 25.1%, are "alive"; 49, or 33.3%, are "dead."

Of the 61 patients who are "well," 7 have been discharged 1 year; 15, 2 years; 13, 3 years; 7, 4 years; 10, 5 years; 8, 6 years; 1, 7 years.

The largest numbers have been discharged 2 years (15 patients) and 3 years (13 patients), but almost as many (10 patients) have been discharged 5 years.

Of the 37 patients who are "alive," 8 have been discharged 1 year; 13, 2 years; 6, 3 years; 1, 4 years; 4, 5 years; 4, 6 years; 1, 7 years.

The largest number have been discharged 1 year (8 patients), and 2 years (13 patients). Of the "alive," 17 patients are working, 14 are in hospitals.

Of the 49 patients who are dead, 10 lived 6 months or less after discharge; 13, 1 year; 8, 2 years; 12, 3 years; 3, 4 years; 2, 5 years; 1, 6 years.

Advanced Group. Of the 59 patients, 7, or 11.8%, are "well"; 9, or 15.1%, are "alive"; 43, or 72.8%, are dead.

Of the 7 patients who are "well," 2 have been discharged 1 year; 2, 2 years; 1, 3 years; 2, 5 years.

Of the 9 patients who are "alive," 3 have been discharged 1 year; 4, 2 years; 1, 3 years; 1, 5 years. Of the "alive," 3 patients are working, 2 are in hospitals.

Of the 43 patients who have died, 17 lived 6 months or less after discharge; 15, 1 year; 6, 2 years; 2, 3 years; 1, 4 years; 2, 5 years.

DETAILS OF CHART III.

Incipient Group. Of the 117 patients, 84, or 71.7+%, were discharged arrested. Of these, 66, or 78.5+% are well; 17 have been discharged 2 years (or less); 17, 3-4 years; 32, 5-7 years.

Fifteen, or 17.8+%, are alive; 6 have been discharged 2 years (or less); 2, 3-4 years; 7, 5-7 years.

Three, or 2.5+%, are dead; 2 lived 2 years (or less) after discharge; 1, 3-4 years after discharge.

Thirty-one, or 26.4+%, were discharged improved. Of these, 16, or 51.6+%, are well; 8 have been discharged 2 years (or less); 1, 3-4 years; 7, 5-7 years.

Nine, or 29.0+%, are alive; 5 have been discharged 2 years (or less); 1, 3-4 years; 3, 5-7 years.

Six, or 19.3+%, are dead; 3 lived 2 years (or less) after discharge; 2, 3-4 years; 1, 5-7 years. Two, or 1.7+%, were discharged not improved. These both died 2 years or less after discharge.

Moderately Advanced Group. Of the 147 patients, 59, or 40.1+%, were discharged arrested. Of these, 33, or 55.9+%, are well; 13 have been discharged 2 years (or less); 12, 3-4 years; 8, 5-7 years.

Eighteen, or 30.5+%, are alive; 10 have been discharged 2 years (or less); 5, 3-4 years; 3, 5-7 years.

Eight, or 13.5+%, are dead; 2 lived 2 years (or less) after discharge; 5, 3-4 years; 1, 5-7 years.

Seventy-five, or 51.0+%, were discharged improved. Of these 29, or 38.6+%, are well; 9 have been discharged 2 years (or less); 8, 3-4 years; 12, 5-7 years.

Fifteen, or 20.%, are alive; 10 have been discharged 2 years (or less); 4, 3-4 years; 4, 5-7 years.

Thirty-one, or 41.3+%, are dead; 20 lived 2 years (or less) after discharge; 9, 3-4 years; 2, 5-7 years.

Thirteen, or 8.8+%, were discharged not improved. Of these 1, or 7.6+%, is well 5-7 years

after discharge. Two, or 15.3+%, are alive; 1 has been discharged 2 years (or less); 1, 3-4 years.

Ten, or 76.9+%, are dead; 9 lived 2 years (or less) after discharge; 1, 3-4 years.

Advanced Group. Of the 59 patients, 3, or 5%, were discharged arrested. Of these, 2, or 66.6+%, are well; 1 has been discharged 2 years (or less); 1, 5-7 years.

One, or 33.3+%, is alive 2 years (or less) after discharge.

Thirty-nine, or 66.1+%, were discharged improved. Of these, 5, or 12.8+%, are well; 3 have been discharged 2 years (or less); 1, 3-4 years; 1, 5-7 years.

Seven, or 18.3+%, are alive; 5 have been discharged 2 years (or less); 1, 3-4 years; 1, 5-7 years.

Twenty-seven, or 69.2+%, are dead; 22 lived 2 years (or less) after discharge; 4, 3-4 years; 1, 5-7 years.

Seventeen, or 28.8+%, were discharged not improved. Of these, 1 or 5.8+%, is alive 2 years (or less) after discharge. Sixteen, or 94.1+%, are dead, all 2 years (or less) after discharge.

It is of interest to note that in Chart I the per cent. of patients discharged "arrested" in the incipient group, 71.7+%, nearly agrees with the per cent. found to be "well" in Chart II, 70.0%. Whether or not these "arrested" patients are the same who are now "well" is shown in Chart III, where it is found that of the total discharged "arrested," 78.5+% are now "well." An "arrested" condition on discharge carries with it a good prognosis, and in our 323 patients this prognosis was realized. The per cent. of those discharged "improved," 26.4+%, coincides with those now "alive," 20.5+%. In Chart III it is found that of those discharged "improved" only 29.0+% are "alive." This indicates that of those discharged "improved," the larger number are in other groups; 51.6+% are found in "well," and 19.3+% are dead,—a very favorable result in "improved" cases. The per cent. of those discharged "not improved," 1.7%, and of those now "dead," 9.4%, is not similar, which is as we might expect, as a certain number of those discharged "arrested" or "improved" would be found to be "dead" either because they were not as well as was thought, or because they had not been able to have the care they still needed.

In the moderately advanced group there are 40.1+% discharged "arrested" and 41.4% now "well." Chart III shows that of the "arrested" 55.9+% are now "well"; a smaller per cent. than in the incipient group, as one might expect, since it is harder as the disease advances to predict the outcome. For the same reason the per cents. of those "improved" and "not improved" do not agree with the per cent. "alive" and "dead." An increased variance is found in the advanced patients.

CHART I.

CONDITION ON DISCHARGE OF THE 323 PATIENTS.

Stage on Admission.	Arrested	Improved.	Not Improved.
I	84 or 71.7+%	31 or 26.4+%	2 or 1.7+%
II	59 or 40.1+%	75 or 51.0+%	13 or 8.8+%
III	3 or 5.0+%	39 or 66.1+%	17 or 28.8+%
Total	146 or 45.2+%	145 or 44.8+%	32 or 9.9+%

CHART II.

PRESENT CONDITION OF THE 323 PATIENTS CLASSIFIED AS: WELL, ALIVE, DEAD, AND SHOWING THE TIME SINCE DISCHARGE.

Stage.		6 Mos. or Less.	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.	6 Yrs.	7 Yrs.	Total.
I	Well		3	21	10	10	19	18	1	82 or 70.0+%
	Alive		3	8	2	2	7	2		24 or 20.5+%
	Dead	2	4	1	1	2	1			11 or 9.4+%
II	Well		7	15	13	7	10	8	1	61 or 41.4+%
	Alive		8	13	6	1	4	4	1	37 or 25.1+%
	Dead	10	13	8	12	3	2	1		49 or 33.3+%
III	Well		2	2	1		2			7 or 11.8+%
	Alive		3	4	1		1			9 or 15.1+%
	Dead	17	15	6	2	1	2			43 or 72.8+%

CHART III.

PRESENT CONDITION OF 323 PATIENTS IN RELATION TO CONDITION ON DISCHARGE, AND THE PERIODS OF TIME WHICH HAVE ELAPSED SINCE DISCHARGED.

Incipient 117.

Present condition	Well									Alive									Dead								
Time since discharge	2 yrs. or less			3 to 4 yrs.			5 to 7 yrs.			2 yrs. or less			3 to 4 yrs.			5 to 7 yrs.			2 yrs. or less			3 to 4 yrs.			5 to 7 yrs.		
Condition on discharge	A[1]	I[2]	NI[3]	A	I	NI	A	I	NI	A	I	NI	A	I	NI	A	I	NI	A	I	NI	A	I	NI	A	I	NI
Number of patients	17	8		17	1		32	7		6	5		2	1		7	3		2	3	2	1	2			1	

Moderately Advanced 147.

Present condition	Well									Alive									Dead								
Time since discharge	2 yrs. or less			3 to 4 yrs.			5 to 7 yrs.			2 yrs. or less			3 to 4 yrs.			5 to 7 yrs.			2 yrs. or less			3 to 4 yrs.			5 to 7 yrs.		
Condition on discharge	A	I	NI	A	I	NI	A	I	NI	A	I	NI	A	I	NI	A	I	NI	A	I	NI	A	I	NI	A	I	NI
Number of patients	13	9		12	8		8	12	1	10	10	1	5	1	1	3	4		2	20	9	5	9	1	1	2	

Far Advanced 59.

Present condition	Well									Alive									Dead								
Time since discharge	2 yrs. or less			3 to 4 yrs.			5 to 7 yrs.			2 yrs. or less			3 to 4 yrs.			5 to 7 yrs.			2 yrs. or less			3 to 4 yrs.			5 to 7 yrs.		
Condition on discharge	A	I	NI	A	I	NI	A	I	NI	A	I	NI	A	I	NI	A	I	NI	A	I	NI	A	I	NI	A	I	NI
Number of patients	1	3			1		1	1		1	5	1		1			1			22	16		4			1	

[1] A—Arrested.
[2] I—Improved.
[3] NI—Not Improved.

SOME HUMAN DOCUMENTS.

Tabulations and percentages have some statistical value and furnish quotable material. They are rather dry reading. When obviously unstudied, and intelligent, letters from patients give the most valuable as well as the most interesting information. Here are some extracts from those received by us in answer to our enquiries. I give a few data on each case as they were when first seen by us and then the extracts in the writer's own words, changing names and places.

N. K., a married women, 39 years of age, six children. A moderately advanced case, at Rutland three months. Discharged, arrested 1907. Under observation in our tuberculosis class before and after going to the sanatorium. Lost sight of for three years. December, 1912, she writes, "I am in the best of health at present, I think I could not feel any better, my weight is 210 pounds at present." This patient was always heavy, 180 pounds when first seen.

A GOOD STUDENT.—T. T., single, 18 years of age. An incipient case, at Rutland, 1907, four months. Discharged arrested. Lost trace of for nearly five years. December, 1912, he writes, " . . . from a slim, haggard-looking human skeleton I have been transformed at the Sanatorium to a ruddy, active citizen. Since leaving the sanatorium I have entered . . . University and graduated with the degree of LL.B. I did not think it expedient to let my high school education go to naught. I paid my tuition by giving private lessons in English, to men of foreign birth. . . . I have never been confined to bed on account of my physical condition. Have retained every ounce of the 20 pounds gained at Rutland. This is perhaps due to the fact that sleep 365 days a year in the open, do not smoke nor drink and lead a regular life. I do not cough, except a little when I rise. I sleep soundly, eat well. Of course I am not a strong man. I am rather short-winded. To remedy this I walk slow and do not over-exercise."

THE BEFORE AND AFTER MAN.—N. E., single, 23 years of age. An incipient case, at Rutland about six and one-half months. Discharged arrested 1907. Not seen by us after admission. Six years after discharge he writes, " . . . was glad to know you people are interested in my health . . . am in the best of health at present, ... thanks to my dear wife I have been able to follow the rules of the Sanatorium, chest baths, etc. Four years after leaving the Sanatorium we came to Colorado. I work at my old trade of tailoring, have managed to keep up my weight . . . don't cough but do raise in the A.M. I send you a photo which I had taken in Rutland and one I had taken here in front of my house." The photographs show in the first a cadaverous, big eyed young man, the second a smiling, self confident fat man standing in front of a frame cottage.

A PERSEVERING WORKER.—T. D., single, 27 years old. An incipient case, at the Sanatorium about eight months. Discharged arrested. March, 1912, writes " . . . after leaving the Sanatorium in February I go back to my old work (in a factory) and I commence to lose weight again. So I go to Canada. I do not do much work that summer but I kept on with the treatment, sleeping out of doors and taking exercise. (sic) That winter I work in the woods, but don't forget the Sanatorium rules. Last spring (1912) I come to New Hampshire I get employment on large farm. I didn't have any idea I could hold my position. I stated my case to my employer, and he bought a tent for me. I work hard all summer and did not lose weight. I gain about 30 pounds when at the Sanatorium and I have 25 of that now. I must tell you I never work on a farm before. I had to learn to handle horses and operate the up-to-date machinery. I heard from one of my neighbors that my boss says I do as good work as any man he has. I tell you this to show you what the Sanatorium did for me. This is a fine country for T. B. We have three foot of snow at present and this morning at 6 A.M. it was 24 below zero. If more of the rested T. B. cases would come here instead of staying round the city it would do them more good."

F. P., single, 29 years old. A moderately advanced case. A student at college when first seen. Nine and one-half months at the Sanatorium, discharged arrested. Not seen again by us. January, 1913, writes " . . . After leaving the Sanatorium I went to Colorado for a year to find profitable employment, to get the benefit of the climate, and to make a home. But one had better be sure of some employment and not trust wholly to good fortune to land him in a job when he arrives there, for there are few industries . . . and more half-well people willing to work for next to nothing, than you can imagine . . . I found it difficult, impossible, to get employment of any kind immediately and I had no course open except to return East . . . I am living in . . . with my wife and child . . . They and I have been perfectly well. I, since I left the Sanatorium, have had nothing to remind me of my former trouble. Sleep always with open windows and have had no cause for calling in, or upon, a doctor." This patient wrote us an eight-page letter full of his experiences since leaving the Sanatorium.

A TEMPERANCE LECTURE.—As a contrast to the above reports take the case of K. D., married, six living children, five dead children. First seen by us June, 1910. The record says, "drinking considerable, chewing five plugs of tobacco a day." Admitted to North Reading August 13, 1910. An advanced case. Discharged October 21, 1910, "improved, against advice." Patient told us he wanted to go to work. We expended much energy in the effort to reorganize the family situation. The burden of a drinking, consumptive father was too heavy. Admitted to Lakeville December 28, 1910. Not working in meantime. The wife reported that patient could always get something to drink. Discharged from Lakeville July 28, 1911, "improved, for misconduct." The patient was reported to have choked an orderly. The social service worker records "evidently an obstructionist." March, 1913, the wife reported to the visitor that the patient had been arrested for drunkenness and committed to the State Farm at Bridgewater. From there we found he had been sent on September 4, 1912, to the Prison Camp and Hospital at West Rutland, admitted as a moderately advanced case. Discharged arrested on August 16, 1913. Had been working

on the farm for sometime previously. This man has spent 21 months under State care; nine months and one week at a sanatorium, almost a year at the Tuberculosis Prison Hospital and Camp. I think the superintendents of the State Sanatoria would tell us that the alcoholics make the poorest patients, do the worst, and give the most trouble.

A BORN FIGHTER.—C. T., single, 41 years old. Admitted August 22, 1910. A moderately advanced case. Remained as a patient 14 months. After 13 months he writes: "It is strange to me I have never had a sick day or a temperature since I came, but still I don't seem able to shake the germs. It's a funny disease. But it's a long lane that has no turn." Discharged October 28, 1911, and remained at the Sanatorium to work. Worked there about 10 months when he left to try for work elsewhere. October 11, 1912, writes, "last August I left the Sanatorium to try for work in a mill, only just got a job. On going to work yesterday morning raised a little blood and last night had a sweat. Have worked just one day. I have no money and know no one that can give me any. Do you wonder that I am discouraged?"

This patient was later admitted to Westfield in the autumn of 1912. May, 1913, he writes from the sanatorium: "I went to work here May 24. I have charge of the boys' camp, 41 beds, half of them under 10. A boiler factory cannot boast of more noise. I like it first rate, the position, I mean, not the noise. I bathe about one-half the children, those under 10, take care of the laundry, make them keep tidy, get them to meals and to school."

LEARNT HER LESSON WELL.—W. T. is a good example of the use of the Sanatorium for the purpose of education. Married, 38 years old, five children. Under observation in our tuberculosis class both before and after going to the sanatorium. Was at Rutland about five weeks, an incipient case. Discharged "arrested" 1907. "Left because husband was tired of doing without her." Not seen for three to four years. December, 1912, she came to the hospital and reported. "My health is excellent. I have slept out of doors since leaving the Sanatorium and carried out the treatment."

FREQUENT RE-ADMISSIONS.—G. T., single, 22 years old, admitted first as incipient case, but with tuberculosis of the spine. Re-admitted five times. These are the dates of admission and discharge:

1. Ad. October 20, 1908, incipient.
   Dis. October 23, 1909, "arrested."
2. Ad. June 28, 1910, moderately advanced.
   Dis. October 17, 1910, "improved."
3. Ad. June 1, 1911, moderately advanced.
   Dis. November 1, 1911, "improved."
4. Ad. June 7, 1912, moderately advanced.
   Dis. October 1, 1912, "arrested."
5. Ad. June 11, 1913, incipient.
   Dis. October 1, 1913, "arrested."

The fourth and fifth admissions do not fall within our tabulations. I give them here to complete the illustration.

This patient spent 28 months at the Sanatorium in all. Was sent South in the winter by a philanthropic person interested in his welfare and returned to the Sanatorium as to a summer resort. The lung lesions were comparatively slight. It might be questioned whether it was wise to use a bed at the Sanatorium so long for such a case.

"DEMORALIZED."—X. C., married, 29 years of age. Was at Rutland between three and four months, an incipient case with a very good prognosis. Discharged, "arrested," in the summer of 1909. When he came to the hospital in answer to our request he reported that he had been afraid to work since discharge, except on part time occasionally. The physician said he was in excellent condition. He is a big stout man. This patient may be constitutionally lazy, but did not so impress us. He seemed relieved and cheered when the doctor prescribed work and plenty of it.

COMMENTS.

The number of cases of pulmonary tuberculosis throughout Massachusetts has been computed at 10,000-12,000 yearly. Up to 1909 there were 350 beds available at a state sanatorium. This number has been increased until now there are about 925, or provision for 9.2+% of the phthisis cases, taking the minimum number of 10,000. We secured state sanatorium care for 419, or 16.3+%, of the 2564 phthisis patients referred to us during the six-year period. It is apparent that the state sanatoria have, so far, played a relatively small part in caring for individuals. Their educative value cannot be computed. The discharged patients have carried the gospel of hygienic living to thousands. The day seems still distant when state care for the phthisical patient will be so organized that private societies can withdraw from the field. Only in few, if any, localities is municipal work able to fill the gap. The state should encourage and help to standardize all forms of private effort in order to secure the maximum of result with the minimum of duplication. Private dispensaries, tuberculosis classes, anti-tuberculosis societies, private sanatoria, day camps: we need them all. How else could we have even attempted the care of our 83.7+%?

We should like to make a study of a group of the patients put on the waiting lists for state sanatorium care and not admitted. They would offer about the same sort of material as our 419 patients. Many of them remained at home, some under the care of private physicians. A later study of patients discharged from the four state sanatoria would be valuable and should be done in two or three years. It would be a fairer test, as the cases would be less selected than our 419.

I regret that we did not attempt to obtain more data about the 419 patients. For example: What proportion of these patients had a family history of tuberculosis? How many returned to their former environment, both as to home and occupation? With the exception of the dangerous trades, there is a growing tendency to encourage patients to return to their former work, and to concentrate social effort on the regulation of the other sixteen hours a day. There is not much statistical evidence as to the comparative merits of these plans.

We thought it would be of interest to find out how many of the 323 patients had some other disease, or tuberculosis elsewhere than in the lungs. We disregarded certain illnesses, as chronic rhinitis and chronic laryngitis, also "debility" and pleurisy. In only 50 patients, or 18.5+%, could we find any evidence of serious complication, although we searched both the sanatorium and the hospital records. As the autopsy table furnishes proof that the great majority of cases of phthisis have tuberculosis elsewhere in the body, it is fair to assume that these 419 patients did not receive a thorough physical examination.

In attempting a study like this, one naturally turns to work along similar lines both for inspiration as to methods and comparison of results.

The difference of the methods employed and the numbers and class of patients dealt with makes any real comparison difficult and misleading. We found the work of Dr. Noel Bardswell,[1] Dr. H. M. King,[2] and Dr. A. P. Francine,[3] especially helpful, and I take this opportunity of acknowledging our obligation to these gentlemen.

Dr. King and Dr. Bardswell, for the most part, did not deal with indigent patients, and they all had the great advantage of a yearly report in compiling their statistics. Their analysis was based, in great part, upon medical findings, and so is more valuable. Our ultimate results, however, are somewhat similar. Dr. Bardswell says his statistics show that 50% of his patients will be in good health 4-9 years after discharge. Dr. King that 28.33% were in a satisfactory condition of health 6-9 years after discharge; only 25% of these were indigent patients. Dr. Francine shows that 51.85% were in good health 4 years after discharge; these were all indigent patients. We found 46.4+% of our indigent patients leading normal lives from 6 months to 7 years after discharge, and 23.5+% 4-7 years after discharge.

Many others have been engaged on this study besides myself. I want particularly to acknowledge my indebtedness to the following: Dr. R. C. Cabot, without whose encouragement and financial aid the work could not have been undertaken; Mrs. W. A. Hinton, and the unpaid workers who did most of the visiting; Miss Ethel Chase, to whom I owe a particular debt of gratitude. She has freely given much time to compiling and arranging the statistics, and in helping me to present the results of our study. I could not have carried the work to completion without her assistance.

REFERENCES.

[1] The Expectation of Life of the Consumptive After Sanatorium Treatment. Noel D. Bardswell.

[2] A Preliminary Study of the Value of Sanatorium Treatment. Herbert Maxon King, M.D., Loomis, N. Y.

[3] Results on January 1, 1913, in Philadelphia Patients Discharged from Mont Alto in 1909. Albert Philip Francine, M.D., Philadelphia.

Clinical Department.

ILEAL STASIS.

REPORT OF THIRTY-THREE CASES.

BY GERALD BLAKE, M.D., BOSTON,

Assistant Physician to Out-Patients, Massachusetts General Hospital; Assistant in Medicine, Harvard Medical School.

FROM the great amount of bismuth x-ray work done on the gastro-intestinal tract during the last few years, in normal cases as well as in those showing symptoms, certain standards have been established which are now generally accepted. It is found that the small intestine normally empties itself of bismuth in less than nine hours after the taking of bismuth by mouth. The presence of bismuth in the ileum more than nine hours after ingestion indicates a delay in the passage of the intestinal contents which is called ileal stasis. This is a functional disorder and may appear as the only abnormal condition present in the case. As a rule, however, it is a symptom or sign of some underlying pathological change, *e.g.* adhesions, inflammation or obstruction.

Analysis of the first 33 cases which showed an ileal stasis of nine hours or more by bismuth x-ray examination at the Massachusetts General Hospital gives results which seem of sufficient interest to warrant publication. As will be seen, the cases were subjected to examination for a variety of conditions—the diagnosis in those cases not operated upon being that given at discharge from the hospital after careful study in the wards. It should be borne in mind that in the great majority of the cases ileal stasis was but one of many abnormal conditions found at x-ray examination. Diagnosis made in this series of 33 cases was as follows:

Adhesions, 8,—

with intermittent hydronephrosis	1
with enteroptosis	1
with cerebral syphilis	1
with congenital syphilis	1
question of adhesions	1
with chronic appendicitis	1*
adhesions	2

Appendicitis (chronic), 4,—

with lead poisoning	1
with gastric neurosis	1
with adhesions around gall bladder	1*
chronic appendicitis	1*

Cholelithiasis, 2,—

with question of chronic appendicitis	1
cholelithiasis	1*

* Operated.

Constipation, 3,—
with gastric ulcer 1
constipation 2
Chronic hepatitis with pigmentation 1
Debility, 1,—
with gastric neurosis 1
Duodenal ulcer, 1,*—
Neurosis, 2,—
with menopause, ... 1
neurosis 1
Neurasthenia, ... 1
Ptosis, 4,—
visceroptosis 2
with cystitis and senility 1
gastroptosis and debility 1
Epigastric and inguinal hernia 1*
Renal calculus and pyelitis 1*
Stricture Tb. of ileum 1*
Tabes dorsalis 1
Tb. peritonitis 1*
Stricture descending colon 1

Five of the above cases had been operated upon in the past for appendicitis as follows:

Adhesions.
Adhesions and intermittent hydronephrosis.
Cholelithiasis.
Pelvic adhesions with congenital syphilis.
Renal calculus and pyelitis.

Five of the cases showed ileal stasis of twenty-four hours or more as follows:

Man, aged 53—diagnosed chronic appendix and adhesions around gall-bladder.*
Woman, aged 21—constipation.
Woman, aged 24—gallstones. Question of appendix.
Woman, aged 29—gastric ulcer.
Woman, aged 42—neurosis.

This last case showed a stasis of 72 hours. The symptoms were not marked, however, and operation was not considered advisable.

Thirteen of the cases (40%) were in men; the ages ranging between 20 and 53, of which 6 or 48% were between the ages of 20 and 30.

Twenty of the cases (60%) were in women; the ages ranging between 21 and 63, of which 7 or 35% were between the ages of 20 and 30.

The series of cases divides itself naturally into certain groups which may be described as follows:

Group 1. Those cases in which ileal stasis is the only abnormal condition found. (Diag. constipation, 2 cases.)

Group 2. Those cases in which there is obstruction or inflammation at or beyond the lower end of the ileum; a group in which the condition of ileal stasis is due to obvious mechanical causes. (Diag., adhesions, 8; appendicitis, 4; tb. peritonitis, 1; tb. stric. ileum, 1; stricture descending colon, 1,—15 cases.)

Group 3. Those cases in which there is loss of nerve or muscle tone in the small intestine, together with the cases of ptosis which are largely due to lack of tone in certain structures or to faults in posture. (Diag., ptosis, 4; neurosis, 2; neurasthenia, 1; tabes dorsalis, 1; debility, 1,—9 cases.)

Group 4. Those cases in which there is delay in emptying the stomach with an accompanying delay in the passage of contents from the small intestine. (Diag., duodenal ulcer, 1; gastric ulcer with constipation, 1,—2 cases.

Group 5. Those cases in which the primary pathological condition seems distinct from the condition of ileal stasis: in which he may consider ileal stasis merely coincident. (Diag., cholelithiasis, 2; chr. hepatitis, 1; epigast. and inguinal hernia, 1; renal calcu. and pyelitis, 1,—5 cases.)

Groups 2 and 3 require no comment, the condition itself being sufficient to cause ileal stasis.

Group 4 suggests the type of case written about extensively by certain observers, notably Lane and Jordan in England, who believe that the pull exerted by the sagging loaded terminal loop of the ileum on the root of the mesentery causes a partial obstruction of the duodenum and resulting delay in the passage of food from the stomach together with gastric symptoms. It is noticeable in the cases of pure ileal stasis that the symptoms resemble closely those of certain stomach disorders—notably hypersecretion and hyposecretion. I have included in this group, however, only cases which appear to have a definite pathological lesion in the stomach or duodenum so that it seems fair to assume that the stomach condition is the important factor and the ileal stasis shown is a result of delay in the passage of contents from the stomach. This cannot, however, be conclusively demonstrated by the small number of cases reported in this series; and the fact that ileal stasis *per se* offers similar gastric symptoms makes the consideration of the type of case worthy of closer analysis when a large number of results is available.

What relation, if any, there is between the primary pathological condition in Group 5 and the accompanying ileal stasis is not clear. Certain of these cases would possibly come under Group 3 if careful analysis were made into the question of loss of nerve or muscle tone—ptosis—etc. The others show no probable relationship and are probably examples of a comparatively large group in which ileal stasis is not a prominent cause of symptoms and is merely coincident.

The symptoms of the two cases of simple ileal stasis were chiefly referred to the stomach—the most marked symptom being distress in epigastrium within one hour after meals. There was moderate constipation in both cases.

A brief review of the commoner symptoms found in the cases is of interest:

* Operated.

		Cases.	%
Constipation		19	57
Constipation alternating with diarrhea		3	9
Gas (in epigast. within one hour p. c.)		16	48
Pain		26	78
Epigastric pain		19	57
Pain, rt. iliac fossa		4	12
Pain in left lower quad.		2	6
Pain in both flanks		1	3
Nausea		6	18
Vomiting		15	45
Stomach contents	High acidity	8	24
	Normal acidity	8	15
	Low acidity	6	18
Diarrhea		1	3

Of gastric contents analysis only one was markedly high and one markedly low. The others were within what may fairly be called high normal and low normal limits. No case showed food residue in the fasting stomach.

The two most common symptoms found in this series of cases were constipation and epigastric pain or distress shortly after meals. Constipation is a natural cause or sequel of the condition of stasis. The relative frequency of the epigastric pain immediately after meals may be accounted for either by the constipation or the theory that ileal stasis produces some degree of obstruction in the duodenum by the pull of the loaded sagging ileum on the root of the mesentery. The nausea and vomiting are probably in relation to the amount of obstruction thus caused and subsequent change in the stomach function. It is fair to say that the degree of variation in the results of analysis of the gastric contents is scarcely proportionate to the severity of the gastric symptoms.

Noticeable is the relatively small number of cases showing alternating constipation and diarrhea which might be expected to occur where there is much fermentation of food residue in the small intestine.

TREATMENT.

Medical. The medical treatment resolves itself into an attempt to restore the inefficient bowel to its normal function. Relief of constipation over a long period of time may of itself be a curative measure, and this has been best accomplished by the use of some of the mechanical agents for moving the bowels, preferably, Russian oil in ½ oz. doses two or three times a day, or Agar Agar in 2 dram, doses T.i.d. or both together, with a diet aimed at relief of constipation and general hygienic and tonic measures to strengthen the weakened tissues.

Mechanical. It is noticeable in x-ray examinations of these cases that the last loop of the small intestine, as a rule, runs up from the pelvis and joins the large intestine at an acute angle rather than at a right angle. Some form of abdominal support is therefore often desirable to aid in holding the small bowel more nearly up in normal position. A webbing belt or swathe passing around the body between the crests of the ilia and greater trochanters of the femurs has been found to be of value. Faults in posture should be corrected by appropriate exercise and apparatus. Rest in a recumbent position after meals is of value as aiding the stomach and intestine to empty themselves, and such exercise as is indicated to strengthen the abdominal muscle and make a firm abdominal wall will aid in holding the small intestine in place.

Surgical. Should these methods prove inefficient and the nerve element be not considered too great a factor operative interference is advisable in the individual case. Where the condition is an aggravated one—where a band or kink is obvious—or where there is obstruction from other causes not to be remedied by non-surgical measures an operation should be done and at as early a date as possible. In the cases of long standing where no obvious obstruction is present but where the symptoms are marked and do not respond to medical or mechanical treatment the resort to surgical interference—short circuiting the large intestine, etc., will often establish efficient drainage of the small bowel and effect relief of the underlying condition.

CONCLUSION.

In this series of 33 cases the following facts are noticeable.

1. Ileal stasis is found,—(1) as a pathological entity; (2) as a symptom of other pathological conditions; (3) as a coincident condition in other diseases to which it is not apparently related.

2. Constipation and epigastric pain soon after meals are the commoner symptoms.

3. The stomach contents analysis is of little or no value in making a diagnosis.

4. Two cases only were of the typical primary ileal stasis type—those diagnosed constipation—although the cases of neurosis and debility (five in number) might be considered as possibly belonging to this type.

5. No case of Lane's kink was found.

6. The treatment is by choice relief of constipation by Russian oil or Agar Agar or both, together with hygienic and tonic treatment, mechanical support of ptosed structures and correction of faulty posture, surgical operation.

7. Diagnosis of the condition is made by bismuth x-ray examination.

I am indebted to Drs. Edsall, Cabot, Smith, Lord, Lee, Hewes, Williams, Codman and Whittemore for permission to use the clinical records of their cases; and to Drs. Dodd and Holmes for permission to use the x-ray records and assistance in the observation of cases.

Medical Progress.

FIFTH REPORT OF PROGRESS IN ORTHOPAEDIC SURGERY.

BY ROBERT B. OSGOOD, F.A.C.S.; ROBERT SOUTTER, F.A.C.S.; HERMANN BUCHOLZ, M.D.; HARRY C. LOW, M.D.; MURRAY S. DANFORTH, M.D.

(*Concluded from page 389.*)

BONE AND JOINT SURGERY.

Experimental. Cotton and Loder[30] have undertaken careful animal experimentation in order to determine which of the two prevailing theories as to the fate of bone grafts is correct. The first theory is that the bone graft is retained without essential change and that it becomes an active centre of growth. The second theory is that the transplanted bone is replaced by a newly formed bone and that the graft is merely a trellis, taking no active part in the repair. They have found that the transplanted bone becomes rapidly fixed by adhesions and that there is a change in every portion of the bony tissue. The bone trabeculae disappear and new bone substance is laid down in the centre as well as in the periphery.

Haas[31] has studied the regeneration of bone from periosteum (rabbits, dogs, and cats), taking his experimental tissue from the ribs. He concludes that the periosteum has the power of regenerating bone and that blood clot enhances this power. He has found that regeneration may occur in the absence of pre-existing bone. He has never in his experiments found bone regeneration in the absence of periosteum.

Axhausen's[32] experiments with the transplantability of joint tissues are interesting and seem to agree with the work of Cotton and Loder as far as the bone portion of the transplant is concerned. He used the lower end of the femur in rats and the patella or pieces of the epiphysis of the femur in rabbits, transplanting these into the subcutaneous tissue of the back of the same animal, making his subsequent examination at periods varying from 3 to 100 days. He believes that in these animals his researches have shown (1st) that bone tissue is not transplantable in a histological sense, and that it undergoes an aseptic necrosis; (2nd) that medullary tissue is transplantable and that joint cartilage is transplantable both histologically and practically; (3rd) that epiphyseal cartilage is transplantable in a histological sense but not enough for practical purposes.

(Ed. Note: The experiments of Soutter at the Harvard Medical School confirm Axhausen's finding in relation to the transplantation of cartilage in dogs.)

Henle[33] reports six cases in which he has employed a method somewhat similar to the Lange method of local splinting of the diseased area in tubercular caries of the spine, except that he employs two grafts of bone removed from the tibia instead of the tinned metal wire splints of Lange. These grafts are placed one on either side of the freshened spinous processes or, where there is a considerable kyphos, on to the laminae. The bone is sutured in place by fixing it to the inter or supra spinal ligaments. He keeps his cases in plaster from two to six months.

Two remarkable cases of joint transplantation are reported by Tuffier,[34] one in a man of 23 who had had an ankylosed elbow for two years. The ankylosed joint was resected and a tibio tarsal joint removed from an amputation in a woman was sutured in place. This case is now 18 months old and the arm is said to functionate well. The x-ray of the transplanted joint seems to show no change in its contours or structure. His second case was that of a man with advanced tuberculosis of the elbow, and the same type of graft was used in this case, having been recovered from a leg amputated five days previously and kept in cold storage. He reports that this joint also has shown no change since transplantation and that the function has been excellent for fourteen months.

Taylor[35] still employs his yellow wax, (one part with 5-10 parts lanoline, melting at 130° F., and sterilized in an autoclave thirty minutes), in the treatment of ankylosed joints, reporting seven cases of fibrous ankylosis in which he has regained motion. We have not seen reports of the use of this original method by other surgeons.

Murphy's[36] report of some 16 cases of arthroplasty by his method of pedunculated and occasionally free fascia flaps includes nearly all the joints of the body except the shoulder, and the results appear surprisingly good.

(Ed. Note: Not the least valuable portion of the article is a plea for the prevention of ankylosis in these infected joints by rational methods of preventive treatment. Far too many acute non-tubercular joints are fixed by splints or plaster bandages and allowed to remain fixed until firm fibrous ankylosis has occurred. We wish again to state our conviction that acute joints which do not rapidly quiet down under rest should be opened, washed out, and sewed up, and that passive motion in all should be begun at the very earliest moment. The results by and large in the most important joints of the hip and knee from arthroplastic operations are still too uncertain for any neglect of these preventive measures.)

The accurate pathology of "snapping hip" has been so often doubtful that a case reported by Binnie[37] represents an important contribution to the subject. Binnie's patient, when carrying a heavy weight or leaning to the right, felt a rubbing over the right iliac crest and on

jumping or suddenly twisting his body he often felt a sharp audible click as if the hip was dislocated. At operation a rolled up fold of fascia along the anterior border of the gluteus maximus was found, which fold slipped over the greater trochanter. By suturing this to the vastus externus the symptoms were relieved.

Magunson[38] has continued his experiments on dogs in relation to the lengthening of shortened bones of the leg by operation, employing carefully devised ivory screws. In the dog the femur can be lengthened ⅜ to ½ an inch without injury to vessels or nerves, and in man he believes 2 to 3 inches might be safely gained. He finds the ivory screws are later absorbed.

SCOLIOSIS.

Perhaps no question in orthopaedic surgery is more important at present than the question of how much may be expected in the way of immediate and permanent correction of the fixed scoliotic curves, by the newer methods of applying plaster jackets in flexion devised by Abbott and Forbes. It may be of interest, therefore, for us to report the opinion of men who have had experience with the method.

Vulpius,[39] in April, had used Abbott's method in 25 cases, and came to the conclusion that with the use of Abbott's table and a correct technique, over-correction is possible in certain cases, and a degree of correction may be obtained which heretofore was impossible. He considers that pressure sores are dangerous and warns against a too early giving up of the plaster cast. He believes that it is still impossible to offer a conclusive judgment as to the permanence of the method.

Joachimsthal[40] has tried the Abbott method in thirty-six patients, varying in age from 8 to 20 years. All of them had fixed curves and had been treated previously without marked results. He finds the total curvatures and those in which the dorsal curve predominates as most amenable. He considers the immediate results surprisingly good in regard to the shape of the thorax, but they are to be explained to some extent, he thinks, by the making of a compensatory curve of the lumbar spine. He still feels somewhat sceptical concerning the final results.

Kleinberg[41] in America has had a very large number of cases (85) under treatment by the Abbott method. He has followed some 40 of these closely and reports 31. He considers the method severe, necessarily prolonged, but capable of giving good results, especially in the milder cases. Of these 31 cases, 10 gave up the treatment after two months. He believes certain cases may be overcorrected, but is not sure that relapses will not occur. He thinks that many can be put in a better attitude, perhaps by the development of compensatory curves.

Whitman[42] believes that Abbott has shown a new surgical principle of treatment that will lead to a great advance in correcting the deformity of scoliosis. He considers that Abbott himself is rather optimistic and he appreciates the limitations of the method, yet he thinks it will be effective in certain cases.

Stern[43] from his experience with a few cases considers Abbott's method the best we have at present.

"*Sciatic Scoliosis.*" Bucholz has made a very thorough study of the phenomenon called sciatic scoliosis. There has been much literature on the subject, especially in Europe, but comparatively little light has been thrown on the etiology or the treatment. Bucholz has selected 174 cases showing deviations of the spine from 761 lesions of the sacro lumbar and sacro iliac regions and has carefully analyzed them. He concludes that not one peculiar, but many, lesions may cause a deviation of the spine, sometimes to the right, sometimes to the left, sometimes total, sometimes with compensatory curves, sometimes changeable by manipulation from one side to the other. He has demonstrated cures in certain obstinate cases by a special method of recumbency with traction and hyperextension of the affected leg. In other cases massage, exercises, and manipulation are indicated, and in others fixation.

(Ed. Note. The anatomical study of the region of the fifth lumbar and sacrum is of utmost importance in these severe back cases and the correct interpretation of the x-rays in the light of clinical signs is being, we believe, gradually attained. While these so-called scolioses do not belong at all in the same class as the structural curves of adolescence, yet their cause may lie in the same region as the numerical variations which Böhm found associated so frequently in the structural cases. Goldthwait has demonstrated the prevalence of these varying articular and transverse process shapes and explained their bearing on back strain, and Adams is finding that the vast majority of the cases of scoliosis under treatment by him in the Orthopædic Clinic of the Massachusetts General Hospital have some abnormality of shape or articulation, the significance of which is gradually being learned.)

FRACTURES AND DISLOCATIONS OF THE SPINE.

Malkwitz[45] reports nine cases from Hoeftmann's clinic of total dislocation of the cervical spine without symptoms of injury to the spinal cord. Clinical and x-ray observations as well as experiments on the cadaver show that a total dislocation of the cervical spine does not necessarily produce a lesion of the spinal cord. Frequently the posterior roots and the spinal ganglia are injured and cause lasting symptoms. The spinal cord in these cases may show an S-like curve. The author believes that the reason why an injury of the spinal cord does not always take place is to be seen in the marked

tilting of the posterior part of the displaced vertebra in anterior dislocations, and vice versa in posterior dislocations. In two of his cases a simultaneous fracture of the arch of the vertebra occurred also, which may be another reason for the absence of cord compression.

(Ed Note. Corner[46] and Mixter and Osgood[47] have reported series of cases of fracture and subluxation of the upper cervical vertebrae without immediate symptoms of cord compression, but the danger in these cases where there are no immediate symptoms is the gradual development of a myelitis from irritation and late bony proliferation. These late and sometimes fatal symptoms have ensued months and even years after the injury and indicate the necessity of exact diagnosis, exact replacement and freedom from irritation accomplished by fixation for a long period after the accident.

Lewandowsky[48] emphasizes the importance of a careful consideration of the clinical symptoms after a back injury in which x-ray picture may reveal nothing absolutely positive. He believes that compression fractures, especially of the lumbar vertebrae, are not uncommon and can only be surely diagnosed by clinical symptoms, but can be frequently confirmed by very careful x-ray examination. On the other hand Rhys[49] cites six cases of what in the x-ray plates appear to be definite fractures of the transverse processes, a distinct gap appearing between the "fragment" and the base. Three of these cases showed a displacement of the outer end up or down. Two cases showed thickened edges of the "line of fracture," suggesting a callous or a joint. These six cases he considers to be only pseudo fractures and to represent imperfect ossification or epiphyseal displacements due to the pull of an attached muscle. Only two of his cases had any history of injury and these injuries were slight. These epiphyses may not ossify until the twenty-fifth year and incomplete ossification may account for the gap.

(Ed. Note: Any large series of good x-rays of the lumbar spine is likely to show gaps of incomplete ossification of the transverse processes and occasionally of several of the transverse processes and on both sides. While we believe true fractures of the transverse process may and do occur, the importance of discriminating between these rare fractures and the commoner abnormalities of ossification is at once apparent in relation to workmen's compensation laws and possible operative treatment.)

MISCELLANEOUS.

Hawley[50] has invented an orthopaedic table which is most easy of operation and most skillfully devised. It meets the various requirements for the treatment of fractures and various orthopaedic conditions demanding fixation, traction, and the application of plaster to the trunk and lower limbs better than any table with which we are familiar.

Newton[51] has conducted an experimental investigation on concussions of the spinal cord. The spinal cord was exposed by laminectomy in the mid dorsal region in three monkeys, 8 dogs, and 39 cats. He has been impressed by the extreme sensitiveness of the cord to slight degrees of compression and concussion and by the considerable disturbance of function with very slight anatomical changes. As a result of his work he has come to believe that there are organic reasons for the symptoms of "railway" and "traumatic" spines, and that very slight effusions or hemorrhages from moderate trauma often cause marked disturbances.

There has been much discussion as to the most advantageous position in which to apply fixative treatment to the spine. Allison and O'Reilly[52] by means of x-rays taken in a special frame for the purpose of accurate comparison have studied the effect of various methods of traction and hyperextension in a case of old Pott's disease with considerable deformity and in the normal child. They conclude that vertical traction with hyperextension gives the best position of the vertebral bodies.

Goldthwait[53] believes that orthopaedic principles should be applied to the treatment of abdominal visceroptosis and chronic intestinal sepsis. It is evident that associated with these conditions are constantly found most extreme cases of faulty posture and frequently the chronic arthritides. He is convinced that by the remodelling of the body by means of positional bed treatment, apparatus, and exercises the faulty posture may be corrected, the ptosis improved, and what is more important, the general health of body and mind immensely changed for the better. Frequently the chronic joint symptoms disappear, and while congenital abnormalities may still condition to some extent the patients' complete return to robust health, these individuals may still be enabled to lead active and useful lives.

The importance of attacking these problems early is emphasized by Vorechelli[54] in a study of the etiology and therapy of dorsal curves. An observation of 906 pupils of elementary schools for girls and boys showed only 37% who were considered normal; over 27% who had varying degrees of what he calls flaccid dorsal curves or "respiratory dorsal curves" with asthenic thoraxes, and over 14% showed some degree of real scoliosis. It was of interest also that the flaccid dorsal curve is most frequent among the little children of the elementary classes, while the scoliotic deviations occur in the older classes, the inference being that the flaccid dorsal curve frequently changes into the scoliotic. Exercise in the open air he believes

to be the rational treatment and the benefit of this he has demonstrated.

Less has been written concerning the "congenital flat-foot" than concerning the congenital club-foot, and it is not rare to find neglected cases of the former condition. Legg[55] believes that a foot which by the third or fourth year has not developed a longitudinal arch, and whose scaphoid bone is not raised from the level of the sole, will gradually develop bony changes in the tarsus and remain flat permanently. He recommends the transplantation of the tibialis anticus to give a more correct pull. He reports ten cases with good results.

Kuelm[56] calls attention to the benefit attained in the case of a man of 68 suffering from intermittent claudication by the use of the faradic current applied while the legs were immersed in warm water. The case is interesting since the relief had lasted for six years at the time of reporting, and the pulse, imperceptible at first, became palpable again after twelve sittings.

(Ed. Note: The relief of this condition in our experience hs been most difficult and the condition is distressing. In two instances lasting relief has been obtained in our hands after the use of light electric vibration and with the report of Kuelm's case we should certainly attempt to stimulate the circulation by gentle methods of hyperaemia.

Drs. Dufour and Bertin-Mouret[57] report a case of Paget's disease in a woman eighty years old. The age of onset was unusual, beginning in her sixty-eighth year. The extreme pain in the extremities was sufficient to make her apply for admission to the hospital. After a positive Wassermann reaction three doses of neosalvarsan were cautiously given with intervals of twelve and thirty days. The pains disappeared and the case improved. The case is noteworthy on account of the treatment and improvement and also on account of the age at which the neosalvarsan was used.

M. Gangolphe[58] reports a case of pretabetic osteoarthropathy in a syphilitic fifty-seven years old, who had a partial absorption of the astragalus and bony proliferation around the lower ends of the tibia and fibula, following a fall. There were no medullary symptoms present, except impotence.

Mintz[59] has treated four cases of lesions of the tibial tubercle of the type of the so-called Osgood-Schlatter disease. He believes that the cause is not a partial avulsion of the tubercle, but that some unknown cause produces atypical bone formation. With the end of the growing period the disease stops. He operated upon two of his cases and the microscopical examination showed rarefaction, osteoclasis, and new formation of osteoid tissue and bone. He calls attention to the fact that similar lesions are found in other places as well, for example, at the epiphyses of the base of the fifth metatarsal bone and at the olecranon.

(Ed. Note: We admit that the exact cause of these lesions is not apparent, but it is a significant fact that they usually occur in active athletic adolescents or pre-adolescents, and only as far as we are aware at the points where powerful muscles are attached. We have a case under observation at present who presents these lesions at one tibial tubercle, the base of one fifth metatarsal, and at the apophysis of one os calcis. We are therefore inclined to believe that strong muscle pulls on appropriately formed growing bone centres, plus perhaps some not understood individual peculiarity in the structure of the epiphyses are the chief factors.)

Musgrave, Sison, and Crowell[60] have made x-ray and microscopical studies of twelve cases of bone lesions following smallpox. The long bones and their joints are most commonly affected and the lesions are always found in persons who have had the disease in early life, in none of their cases after 14 years of age. The diaphysis is shortened and the epiphyseal region distorted. The condition is evidently due to some change at the epiphyseal line which prevents the growth of the shaft. The contour of the shaft and its structure are unaltered. No microscopical changes were found.

Symmes and Wallace[61] have found pathologic changes in the thyroid glands in the cretinistic variety of chondrodystrophia foetalis and they recognize in these cases a type of chondrodystrophia in which the modifications in the soft tissues are comparable with those generally admitted to be due to defects of the thyroid gland.

(Ed. Note: Certain of the dwarf characteristics of the achondroplastic individual may be roughly compared to the peculiarities of the cretin. It seems most probable that there are some of these abnormal human variations that are deficient at the same time in many ways and we should expect dyspituitarism to be associated with disturbed secretion in other ductless glands. If we recognize achondroplasia as caused by a restriction of the activity of the hypophysis due to early ossification of the tribasilaris we may expect that in these cases various abnormalities may co-exist. Changes in the thyroid may be one of those concomitant abnormalities.)

Matts[62] has studied the changes in the bones of young dogs after excisions of the thymus gland. After complete excision there were distinctly progressive changes in the skeleton consisting of softening and bowing of the bones. This went hand in hand with a very marked weakness of the muscles and resulted in complete cachexia with impossibility of locomotion. Under the microscope a distinct similarity to rachitic changes was observed, evidenced by the

occurrence of limeless bone tissue of very large extent. This change was caused by resorption of calcified bone and extensive new formation of osteoid tissue. From this morphological similarity of the processes after thymus excision to the changes in human rickets, it is not conclusively proved that both processes are of the same nature, but the similarity is at least suggestive.

(Ed. Note: An interesting case in this connection has been observed by the editors which seems also possibly suggestive. An operation was performed for the correction of a disabling coxa vara in a case of marked adolescent rickets. A septic infection at first mild but uncontrolled by free drainage occurred, to which the boy succumbed. At autopsy a very large thymus gland and a status lymphaticus was found.

BIBLIOGRAPHY.

[1] Tubby: Lancet, July 19, 1913, p. 137.
[2] Wilson and Rosenberger: N. Y. Med. Jour., June 14, 1913.
[3] Packard: Colorado Medicine, July, 1913.
[4] Green: BOSTON MED. AND SURG. JOUR., May 29, 1913, p. 797.
[5] De Quervain: Semaine Médicale, June 4, 1913, vol. xxxiii, No. 23.
[6] Fenwick: British Med. Jour., June 19, 1913.
[7] Cashman: Am. Jour. Med. Sciences, August, 1913.
[8] Estor: Am. Med. et Chir. Inf., May 1, 1913.
[9] Witek: Wien. klin. Woch., 1913, p. 1075.
[10] Alkan: Berliner klin. Woch., Aug. 4, 1913.
[11] D'Oelsnitz: Pediat. Soc. d. Paris, May 20, 1913.
[12] Vulpius: Strahlentherapie, vol. iii, p. 104, 1913.
[13] Hagemann: Deutsche Med. Woch., 1913, p. 1450.
[14] Meuser: The Medical Quartz Lamp, Stuempke, Hannover.
[15] Beattie and Yates: Jour. of Path. and Bact., April, 1913.
[16] Gudzent: Deutsche med. Woch., May 8, 1913.
[17] Bornstein and Plate: Fortschr. a. d. Geb. d. Roentgenstr., vol. 18, 1912.
[18] Lefevre and Dubourg: Annales d. Med. et Chir. Inf., May 15, 1913, p. 309-344.
[19] Lasserre: Jour. d. Med. d. Bordeaux, May 11, 1913, p. 289-304.
[20] Wolf: N. Y. State Jour. of Med., July, 1913, p. 379.
[21] Handley and Ball: Brit. Med. Jour., May 3, 1913, p. 929.
[22] Patterson: New Orleans Med. Jour., May, 1913.
[23] Fraser: Jour. Exp. Med., Sept. 1, 1913, p. 242.
[24] Rosenau: Jour. A. M. A., May 24, 1914.
[25] Sawyer and Herman: Jour. A. M. A., Aug. 16, 1913.
[26] Allison: Am. Jour. Orth. Surg., May 1913, p. 519.
[27] Bartow and Plummer: Am. Jour. Orth. Surg., May, 1913, p. 499.
[28] Gaugele and Guembel: Fischer, Jena, 1913.
[29] Biesalski: Deutsch. med. Woch., April 10, 1913.
[30] Cotton and Loder: Surg., Gyn. and Obstet., June, 1913.
[31] Haas: Surg., Gyn. and Obstet., August, 1913.
[32] Axhausen: Arch. f. klin. Chir., 1912, vol. 99, No. 1.
[33] Henle: Verhandl. d. Ges. Dtsch. Naturforscher u. Aerzte, 1913.
[34] Tuffier: Gaz. des Hop., vol. 85, bd. 34, p. 490.
[35] Taylor, R. T.: N. Y. Med. Jour., May 31, 1913.
[36] Murphy, J. B.: Annals of Surgery, May, 1913.
[37] Binnie: Annals of Surgery, July, 1913.
[38] Magunson: Surg., Gyn. and Obstet., July, 1913.
[39] Vulpius: Deutsche med. Woch., April 10, 1913.
[40] Joachimsthal: Berliner klin. Woch., 1913, No. 15.
[41] Kleinberg: Surg., Gyn. and Obstet., July, 1913.
[42] Whitman: Surg., Gyn. and Obstet., Aug., 1913.
[43] Stern: Ohio State Med. Jour., Aug. 15, 1913, p. 373.
[44] Bucholz: Am. Jour. Orth. Surg., May, 1913.
[45] Malkwitz: Arch. f. Mech., Orth. u. Unfallchir., 1912, vol. x, p. 289.
[46] Corner: Annals of Surg., Jan., 1907, p. 9.
[47] Mixter and Osgood: Annals of Surg., Feb., 1910, p. 348.
[48] Lewandowsky: Med. Klinik, June 29, 1913.
[49] Rhys: Brit. Med. Jour., May 24, 1913.
[50] Hawley: Jour. A. M. A., June 4, 1913, p. 1850.
[51] Newton: Brit. Med. Jour., May 24, 1913.
[52] Allison and O'Reilly: Surg., Gyn. and Obstet., June, 1913.
[53] Goldthwait: Surg., Gyn. and Obstet., June, 1913.
[54] Vorechelli: Archivio Di Orthopedia (Memorial number) Feb. 28, 1913.
[55] Legg: Am. Jour. Orth. Surg., May, 1913, p. 584.
[56] Kuelm: Zent. f. Chir., April 26, 1913.
[57] Dufour and Bertin-Mouret: Gaz. des Hop., vol. 86, No. 8, p. 123.
[58] Gangolphe: Revue de Chir., vol. xxxiii, No. 3, p. 406.
[59] Mintz: Zentralbl. f. gesammte Chir., 1913, vol. 11, p. 671.
[60] Musgrave, Sison and Crowell: Philippine Jour. of Science, April, 1913.
[61] Symmes and Wallace: Arch. for Int. Med., July 15, 1913.
[62] Matti: Mitteil. a. d. Grenzgeb. der Med. u. Chir., vol. 24, p. 665.

Reports of Societies.

NEW ENGLAND PEDIATRIC SOCIETY.

Twenty-eighth meeting held at the Boston Medical Library, December 12, 1913.

FRITZ B. TALBOT, M. D., SECRETARY.

DR. THEODORE W. ELY read a paper entitled

ALCOHOLIC CIRRHOSIS OF THE LIVER IN CHILDHOOD WITH REPORT OF TWO CASES.

Abstract: The paper contained a brief review of the literature on the subject with a resumé of the general symptomatology. Two probable cases in twin boys of four years, and the post-mortem findings in one of these cases were reported.

DISCUSSION.

DR. HOWARD T. KARSNER: Unfortunately, it was not possible to give Dr. Ely the description of histological material in the autopsy report. Grossly, the liver is not the "hob-nail" liver commonly seen in alcoholic cirrhosis and microscopically there is nothing in the nature of hyalin or other change to indicate a typical alcoholic form. To the contrary, the histological picture is that of cicatrization and attempted repair following an extensive acute destructive lesion similar if not identical with acute yellow atrophy. That alcohol can produce such a destructive change has not been demonstrated and therefore the etiological agent in this case must remain in doubt.

DR. ELY: I have nothing to add except to say that cirrhosis of the liver due to other cause was ruled out from the fact that the evidences of liver impairment were present before the attack of measles. Aside from this acute infection, I think all the more common causes of cirrhosis in childhood were ruled out by the history, physical findings and clinical tests.

DR. W. E. LADD read a paper on

THE TREATMENT OF TUBERCULAR CERVICAL ADENITIS IN CHILDREN.

Abstract: The various forms of treatment in vogue at the present time reviewed. He reported 83% of cures in a series of forty cases by thorough extirpation of all infected glands with the primary focus and recommended this form of treatment as it apparently yields 30 to 40% more cures than any other yet devised. Active tubercular lesions in the tonsil were found to be more common than had been previously reported.

DISCUSSION.

DR. CLEAVELAND FLOYD: I think something ought to be said on the other side of this subject. In each of the three series of cases which have been quoted, showing such a large percentage of cures, there has been one death following operation. Two of these deaths were due to acute general tuberculosis. In other words following the operation of tubercular cervical adenitis death does occur and it is not very uncommon that the local process becomes a general one. I know of several such results. No

one will deny that good hygiene is a part of any treatment of tuberculosis no matter where the disease is located.

The point made by Dr. Ladd in regard to removal of the tonsils is an excellent one. The tonsil is commonly the primary focus of the disease and should be removed in all cases. After this has been done however, the glands will take care of themselves and should be let alone.

The men in charge of surgical clinics speak of the poor results they have seen as the result of the use of tuberculin. The same thing is true of the work of the surgical clinic, in that the men using tuberculin are often called on to treat a case of tubercular adenitis after two or three operations have failed to give relief and the scars themselves have become infected. The time required to get good results with tuberculin has been urged as a point against it. In every case of localized tuberculosis prolonged observation is an excellent thing for the patient in order that his mode of living may be supervised. This far outweighs the value of the loss of time borne by the patients. If the tonsil, as the primary focus of tubercular adenitis is removed and such glands as have broken down are drained, then I believe that surgery has done all that is required. Palliative surgery with tuberculin and prolonged observation, will give more lasting results without complications, than can be obtained by surgery alone.

DR. H. I. BOWDITCH: I am glad the question of tubercular adenitis has been brought up because I think it is good to thrash it out. Some years ago, when tuberculin was first started here in Boston, I was interested in the tubercular glands of the neck at the Out Patient Clinic of the Children's Hospital, and I tried in a very small way the tuberculin injection, choosing children who had a sinus. As I remember it, they were very few in number, but they seemed to me to clear up very rapidly with the tuberculin treatment. I agree with Dr. Floyd and Dr. Ladd in having the tonsils out where they seem to be the cause of the infection, but I am not quite sure yet where surgical treatment comes in to the best advantage of the child. However, I think that the tuberculin treatment is of advantage. In other words, if you put me to the test, I should give tuberculin before I should do an extensive operation on the neck. There is another point which must be considered *i. e.*, that it is possible that some of these cases of cervical adenitis are not of tubercular origin.

DR. CHARLES G. MIXTER: The surgeon does not object to tuberculin as a medical procedure but what he believes in is that when tuberculin has been tried and the glands do not subside that the case should be considered a surgical one, and not wait for one abscess after another to appear. Then you can hope for a radical cure, for in this way you get rid of the glands.

DR. CLEAVELAND FLOYD: I was much interested in listening to Dr. Mixter's experience in having seen one abscess after another. It is rather an unusual thing with the use of tuberculin. Tuberculin is useful in the bilateral cases also, and in cases which have broken down it cleans up the sinus and we do not see a succession of abscesses. Some difficulty is experienced in a few of the cases, for it is not an uncommon thing for them to receive one or two doses of tuberculin and then disappear for two or three months, having in the meantime gone the round of the hospitals.

DR. J. S. STONE: There is one point upon which we are all agreed. The tonsils must be removed. I think if we do that, and do it early enough, the end results, no matter what other treatment is added, are going to be much better.

DR. LADD: I think Dr. Floyd has brought up a question of surgical accident which has always been a drawback to surgery. We all have to admit that we do occasionally lose cases through surgical accident but I do not think that the results with tuberculin are convincing enough for us to give up surgical measures in these cases. The question of abscesses not following one after another in his experience I think is rather unique. I have seen a good many cases treated with tuberculin, and I have been in a position where I have had to dress them for the medical men, and have had not a few dressings to do in some instances. With regard to the question of stirring up a general infection, I think this is a very good one but it is uncommon. The tuberculosis of the neck is, in a large percentage of cases, a local thing, and the number of cases in which there is involvement of the lung or of other parts of the body is comparatively small. There are some cases in which there are involvements of the bones or joints besides the glands, or glands in other parts of the body than the neck. The few cases that I have seen that had other parts of the body affected have usually been benefited by the dissection of the neck and the removal of the tonsils.

DR. J. J. THOMAS of Boston, read a paper on

OBSTETRICAL PARALYSIS, WITH ESPECIAL RELATION TO TREATMENT.

Abstract: In obstetrical paralysis we have an injury of peripheral nerves, in the plexus, and the paralysis and atrophy are never as intense as in cases of poliomyelitis, because of partial recovery. The treatment is surgical by resection of the injured nerves by transplantation of muscles. The most effective treatment in milder cases is that by educational exercises devised to train the child to use the weaker muscles and so develop them instead of substituting the action of the stronger muscles which produces awkward roundabout ways of achieving the purpose aimed at.

DISCUSSION.

DR. WALTER B. SWIFT: I should like to ask how Dr. Thomas would account for the recovery in these cases of obstetrical paralysis. Is it a regeneration of neurones or a resumption of function where fibers have been temporarily merely functionally involved, or is the recovery a muscle change?

DR. J. S. STONE: Anything which causes muscular relaxation, whether it be the etherization of the child through etherization of the mother or whether it be the relaxation of muscles from asphyxia or other cause plays a very important part in the etiology. Early support to the paralyzed muscles to prevent their being over-stretched is of extreme importance. While they are paralyzed they must be supported, because recovery is much better if they are supported. The lesion is mechanical. The problem would be purely surgical if the injury was a knife-cut. The difficulties of surgical interference are that in every case some of the fibres are torn, some of the fibres are stretched and some of the fibres are pressed on by the exudation into

the surrounding tissues. If we could only tell how extensive the tearing is then the problem would be more frequently a surgical one. There is a further difficulty that in many cases the injury is in a location which cannot be reached, that is, close to or even within the foramena. Personally I hope to see more and more progress along surgical lines. The problem is a mechanical one. The difficulties in surgical treatment are now very great.

DR. THOMAS, in closing: Of course training of muscles does not cure the condition in the nerve fibres. What I think is that stretched fibres recover in time by the natural regeneration when they have not been actually torn. This recovery is proved by the regaining of some power of voluntary contraction which is practically always seen to some extent. What a system of muscle training does is to teach the child to use these weak muscles, instead of substituting awkward movements to accomplish its object, by using the stronger muscles, and in this way we develop the weak muscles. Such a method, as I have said, to be successful, should begin early, before permanent changes in the affected muscles have taken place, and they require the treatment over quite a long time.

DR. PHILIP H. SYLVESTER read a paper on

SOME TRAGIC ASPECTS OF WHOOPING COUGH.*

DISCUSSION.

DR. CLEAVELAND FLOYD: I think the first case was one of considerable interest from a bacteriological standpoint, with the appearance of a large number of cells in the spinal fluid, then the appearance of staphylococci, the case going on to be a chronic one pointing towards recovery. It is quite an unusual thing to have staphylococcus meningitis, in the first place, and to have recovery in the second. I should like to ask Dr. Sylvester if he will give us a clear idea of what we ought to do in the prophylaxis and treatment of whooping cough.

DR. L. W. GILBERT: I think that something can be done regarding prophylaxis of whooping cough in the schools. The medical examiners who go to the different schools see a great many cases of children with cough without any definite whoop. One year when I was inspecting the schools in Brookline I made it a rule that a child who coughed for three or four days should be sent home, and the result was that instead of having a severe epidemic of whooping cough in a school which generally had one, I think there were something like twenty cases that year where they ordinarily had one hundred to one hundred thirty.

DR. SYLVESTER, in closing: In regard to prophylaxis, of course we all know that it is very difficult to tell at first whether a child is going to have whooping cough or not, but when we have a cold in a child with a cough, after exposure, we are justified in isolating that child to see how it will turn out. It seems to me that the regulations regarding whooping cough should be a great deal more stringent because, as statistics show, ten thousand or more children die annually with this disease in the United States. I think our Boards of Health should adopt more stringent measures regarding the control of this disease, and have the power to isolate all cases. As far as treatment is concerned, I suppose anything that helps is treatment. I do not know of any one thing which will give results in any one case. We have to try them all out, vaccines, bands and vaccination, and when a case is severe at all, I put most of my faith in sedatives to keep down the intensity of the paroxysms and to reduce their number.

* See page 406.

Book Reviews.

Die Störngen der Männlichen Geschlectsfunctionen und ihre Behandlung, von DR. EMIL KANTOROWICZ. Berlin, Wiener: Urban and Schwarzenberg. 1913..

In this small handbook of 118 pages the author presents in concise and readable form under clear headings many facts regarding the sexual life, both in its normal and pathological aspects. Its practical value is increased by a discussion of the treatment of various sexual conditions. It is illustrated by eleven cuts, and in general is a useful book of its kind, brevity being not the least of its virtues.

A Manual of Venereal Diseases. Introduction by SIR ALFRED KEOGH, K.C.B.; History, Statistics, Invaliding, etc., BREVET COL. C. H. MELVILLE, R.A.M.C.; Clinical Pathology and Bacteriology, BREVET COL. SIR WILLIAM LEISHMAN, K.H.P., F.R.S., R.A.M.C.; Clinical Course and Treatment, MAJOR C. E. POLLOCK, R.A.M.C. Second edition, revised and largely rewritten, with new matter by L. W. HARRISON, R.A.M.C. Oxford Medical Publications. London: Henry Frowde, Hodder and Stoughton. 1913.

This is an admirable book, written by officers of the British Army Medical Service, on the practical problems of venereal disease. Considerable space is given the the history of syphilis, leading up to the discovery of its causative organism, and to a discussion of the Wassermann reaction, which followed. Several chapters are devoted to treatment by salvarsan and neosalvarsan, and a detailed description given of the various methods of administering mercury, with their relative advantages. Gonorrhea and the less important venereal disorders are given due space. In spite of the great number of books on the general subject of which this manual treats, we are not surprised that a second edition has been demanded. Although the modest statement was made in the preface to the first edition, that the book was "intended merely to act as a convenient manual, for the use primarily of the army medical officer, to assist him in his daily work in the prevention and treatment of venereal disease," we foresee for it a field of much wider usefulness. It will be of interest to sociologists that Sir Alfred Keogh, in his introduction, asserts with assurance that the legislative control of prostitution has certainly limited the spread of venereal disease in armies.

THE BOSTON
Medical and Surgical Journal

THURSDAY, MARCH 19, 1914.

A Journal of Medicine, Surgery and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States.* $6.56 *per year for all foreign countries belonging to the Postal Union.*

Papers for publication, and all other communications for the Editorial Department, should be sent to the Editor of the Boston Medical and Surgical Journal, 809 Paddock Building, 101 Tremont Street, Boston. All orders for reprints must be sent in writing to the Editor on or before the day of publication.

The Journal will furnish 100 *reprints free, if requested in writing.*

All letters containing business communications, or referring to the publication, subscription or advertising department of the Journal, should be addressed to the undersigned

Remittances should be made by money order, draft or registered letter payable to

W. M. LEONARD,
101 Tremont Street, Boston, Mass.

THE COOLIDGE TUBE.

In the issue of the Journal for Jan. 8, 1914, (Vol. clxx, p. 64), we made preliminary editorial comment on the new form of Roentgen tube invented by Dr. William David Coolidge, of New York, and first demonstrated by him before a meeting of physicians, physicists, and radiographers on Dec. 27, 1913.

In another column of the present issue of the Journal, we publish an article by Dr. Van Allen, of Springfield, describing in more technical detail the Coolidge tube and its scientific and clinical advantages. The early anticipations of the great value of this instrument seem to be fully realized in practise, and its employment should mark the opening of a new period in Roentgen work.

To the roentgenologists who have worked with the Roentgen tube from its earliest form up to the present wonderfully developed transformer tube with its tungsten target, the Coolidge tube is a revelation far beyond what was ever hoped for. To have at one's command an instrument which makes it possible to give absolutely accurate exposures for roentgenographic work, roentgenoscopic observations, and also to be able to give a positively accurate dose when used as a therapeutic agent, reduces roentgenology almost to an exact science.

When Dr. Coolidge's invention is used in connection with a transformer which will give practically an unfluctuating, non-impulsive, unidirectional current, with which it is possible to use a volt meter in the tube circuit giving the absolute penetration of the tube indicated by kilovolts (thus eliminating the other somewhat inaccurate methods of penetration), then conditions of perfect accuracy are realized.

We already owe much to Dr. Coolidge for his development of the tungsten anodes, used in the present transformer tubes. His latest development leaves nothing to be desired as far as the Roentgen tube is concerned. With the Coolidge tubes, the operator can now get not only homogenetic Roentgen rays, but complete accuracy of dosage. This is of the utmost importance in all branches of this field, but particularly in roentgenotherapy. In this branch of the work, much more can now be accomplished than has ever before been thought possible.

In regard to the dangers from the use of the Coolidge tube, there seems no reason to believe that they are greater than from the previous type when used by those who appreciate the fact that every Roentgen tube is a source of danger when carelessly or ignorantly operated. The amount of energy that can be obtained from this tube is almost unlimited, but is absolutely under control. The penetrating power is still dependent upon the voltage impressed on the terminal of the tube, as in the older types. But the fact that its operation is no longer dependent on the presence of vapor in the tube, that simply by heating the cathode by means of a low voltage current, the tube can be operated at any desired penetration (such penetration being dependent upon the voltage delivered to the terminals of the tube and the amount of current being dependent upon the degree of heat applied to the cathode from the low voltage current), puts into the hand of the expert an instrument of precision in which there is no danger, providing he realizes its limitations.

For a more complete technical description of the tube and its methods of use, our readers are referred to the original article by Dr. Coolidge in the January (1914) number of the *American Journal of Roentgenology.*

MEDICAL LEGISLATION. REGISTRATION OF VITAL STATISTICS.

In the issue of the Journal for Feb. 26 (Vol. clxx, p. 325), we commented editorially on the proposed bill (House No. 1348) to amend the laws of this state in relation to vital statistics.

The essential provisions of this bill are embodied in three sections, as follows:—

"Section 1. The State Board of Health shall have charge of the compilation and tabulation of births, marriages, deaths, divorce returns and medical examiner returns, shall prepare for the Secretary of State the official report on these subjects to the General Court, including therein tables and analyses of morbidity returns, and shall from time to time recommend any additional legislation that may be necessary in relation to such statistics.

Section 2. This statistical work shall be under the management of a competent physician who shall be known as the State Registrar of Vital Statistics. He shall be appointed by the Governor with the advice and consent of the Council upon nomination by the State Board of Health.

"Section 3. All copies of births, marriages, deaths, divorce returns and returns from the medical examiners, called for by law shall be sent by city clerks and other officials to the State Board of Health. These copies and returns shall be used for statistical purposes by the State Registrar of Vital Statistics and then transmitted to the Secretary of the Commonwealth for permanent custody."

At present the death certificates are analyzed, tabulated and published by the Secretary of State. The medical department of health of the state, *i.e.* the State Board of Health, has nothing whatever to do with them. Under these circumstances it is not to be wondered that the statistics do not command the respect that they did when supervised by the secretary of the State Board of Health, as they were for half a century previous to 1890. Massachusetts was the first state in the country to have vital statistics, about 1843, and the death returns then ranked first in accuracy and efficiency. It is the restoration of these conditions which is intended by the present measure quoted above.

A hearing in favor of the proposed bill was held on March 5 before the committee on public health, and at this hearing the bill was advocated by various medical organizations.

The proposed legislation on vital statistics has been approved by The Massachusetts Medical Society—through its committee on state and national legislation—by the American Statistical Association and by the Massachusetts Association of Boards of Health.

The resolutions unanimously approved by the latter association are given below:—

"Whereas, One of the most important functions of boards of health is the prompt return of reliable vital statistics, and

"Whereas, the chief factors of vital statistics, the births and deaths, are medical matters and hence necessarily in charge of physicians, and

"Whereas, By reason of the character of the data involved, their supervision and tabulation can be much better done by a physician, who has been properly trained and educated for this work, and

"Whereas, The vital statistics of Massachusetts are in charge of the Secretary of State, instead of the medical department of the State, now, be it

"Resolved, By the Massachusetts Association of Boards of Health, in annual meeting assembled that it would be for the distinct advantage of the public welfare to have the vital statistics placed in charge of the State Board of Health for their proper arrangement and tabulation previous to their being given in charge of the Secretary of State for permanent custody. By this means the vital statistics would remain in the hands of the medical profession, where they naturally belong, until they have been put in proper shape for permanent record.

"Resolved, That appreciating the importance of the desired change and of the efforts now being made to bring it about, this Association most earnestly approves of House Bill, No. 1348, which simply directs that the vital statistics of this state on their way to the office of the secretary of state shall pass through the office of the State Board of Health for the purpose of permanent arrangement and tabulation."

THE REPORTING OF INDUSTRIAL DISEASES.

AMONG the acts of the Massachusetts General Court of 1913 was one (Section 6 of Chapter 813) which provided as follows:—

"The joint board (of labor and industries, and industrial accidents) may require every physician treating a patient whom he believes to be suffering from any ailment or disease contracted as a result of the nature, circumstances or conditions of the patient's employment to report such information relating thereto as it may require, within such time as it may fix, to the state board of labor and industries, and may issue a list of such diseases which shall be regularly reported upon by physicians and may add to or change such list at any time."

Under the provisions of this section, the board passed the following regulation:—

"Under authority of Section 6 of Chapter 813 of the Acts of 1913 the Joint State Board of Labor and Industries and Industrial Accidents hereby requires that every physician treating a patient whom he believes to be suffering from

poisoning from lead, brass, phosphorus, arsenic or mercury or their compounds, or wood alcohol, or from anthrax, or from compressed air illness, to report within 48 hours to the State Board of Labor and Industries, the information relating thereto called for by the reporting blanks issued by the said Board. Every such physician is hereby requested to make reports on the said blanks to the State Board of Labor and Industries of any patient whom he treats that is suffering from any other ailment or disease which the physician believes to have been contracted as a result of the nature, circumstances or conditions of the patient's employment."

This regulation became effective on March 1, and appropriate blanks for making reports have been distributed by the board to physicians throughout the state. The attention of all is called to this new piece of medical legislation and to their duty of compliance therewith.

MEDICAL NOTES.

LONDON DEATH-RATES IN JANUARY.—Statistics recently published show that the total death-rate of London in January was 18.4 per 1000 inhabitants living. Among the several districts and boroughs, the highest rate was 23.4 in Finsbury, a crowded central slum, and the lowest was 12.3, in Lewisham, an open southern suburb.

XIPHOPAGOTOMY.—In the issues of the JOURNAL for Jan. 8 and Feb. 12 we commented on the recent birth of a pair of xiphopagi in France. Report from Paris states that they were surgically severed on March 4, and are both doing well. They were born on Nov. 28, 1913, and at that time weighed 10 pounds. Later report states that one of the infants has died.

BUBONIC PLAGUE IN HAVANA.—Recent report from Havana states that a case of bubonic plague was discovered in that city on March 5, and a second case on March 10. The patients were isolated, and every precaution taken to prevent further spread of the infection. The first patient has already died, but no further cases have as yet been reported.

INJUNCTION AGAINST IOWA STERILIZATION LAW.—Report from Council Bluffs, Iowa, states that on March 11 the United States district court granted a temporary writ of injunction against the enforcement of the Iowa sterilization law in a case filed at Keokuk.

JORDAN MEMORIAL SANATORIUM.—The recently published first annual report of the Jordan Memorial Sanatorium at River Glade, N. B., records the work of that institution for the year ended Oct. 31, 1913. During this period 36 tuberculous patients were under treatment. The institution was created by legislative act in 1911, and the site and buildings were given by Mrs. James C. Jordan, of San Francisco. It is situated in Westmoreland County, seventy miles from St. John and twenty miles from Moncton. The first patient was admitted on March 17, 1913. Only cases in the early stages of phthisis are considered suitable for admission.

TYPHOID FEVER NEAR MONTREAL.—Report from Montreal on March 3 states that typhoid fever was then epidemic along the valley of the Richelieu river. A total of 400 cases has been reported. In the little town of St. John, 200 cases and 4 deaths have occurred. The infection has been traced to a polluted water-supply.

INVESTIGATION OF CHINESE SANITATION.—Report from Chicago on March 5 states that Dr. Harry Pratt Judson, president of the University of Chicago, has been appointed chairman of a commission of the Rockefeller Foundation to investigate medical and sanitary conditions in China. The commission will sail from New York on March 21. It will visit Paris, Berlin, St. Petersburg and Moscow on the way, and is due to reach Pekin on April 18.

SCARLET FEVER IN NEW JERSEY.—Report from Florence, N. J., on Mar. 10 states that scarlet fever is epidemic in that town of 2000 inhabitants. There have been 35 cases since Dec. 1, 1913; there have been 11 deaths since Feb. 27; and 23 cases are now under observation. The local churches have been closed.

BOSTON AND NEW ENGLAND.

A CASE OF SMALLPOX IN DORCHESTER.—A case of smallpox was recently discovered at Dorchester, Mass. The patient was removed to Galloupe's Island, and all ascertainable contacts were vaccinated.

TONSILLITIS IN WAKEFIELD.—The epidemic of tonsillitis in Wakefield and Stoneham, Mass., to which we referred in last week's issue of the JOURNAL, is reported as at an end. There was a total of about 400 cases.

MEASLES AT EXETER.—Report from Exeter, N. H., on March 6, states that measles was then epidemic among students in the local Phillips Academy. Twenty-eight cases of the disease had been reported on that date.

FIRE AT MILLET SANATORIUM.—Report from East Bridgewater, Mass., states that on March 8, five of the nine one-room houses of the Millet Tuberculosis Sanatorium were destroyed by fire, with an estimated damage of $2000. The patients were all removed to the main building.

REPORT OF THE BUTLER HOSPITAL.—The recently published seventieth annual report of the Butler Hospital of Providence, R. I., records the work of that institution for the calendar year 1913. During this period 249 patients were under treatment, over 40% of whom entered on voluntary application. A new operating room and dispensary have been established, and the new Potter Home for Nurses has proved useful and beneficial. On June 13, 19 nurses were graduated from the training-school.

BOSTON ASSOCIATION FOR THE RELIEF AND CONTROL OF TUBERCULOSIS.—The recently published tenth annual report of the Boston Association for the Relief and Control of Tuberculosis records the activities of that organization for the year ended Oct. 31, 1913. Of the eight legislative measures advocated by the Association during this period, six were enacted into law. Lectures and exhibits have been held, 171,000 pieces of literature distributed and 1,353,969 red cross seals sold. A domestic science visitor has been employed and follow-up work maintained. The Prendergast Camp has continued its work, and during the year was used by 61 patients.

THREE CENTENARIANS.—Mrs. Columbia Parris, of Paris, Me., who is said to have been born in March, 1814, celebrated recently her supposed centennial anniversary.

Mrs. Patrick Bowe, who died recently in Woburn, Mass., is said to have been born at Dublin, Ireland, in 1810. She migrated to the United States in 1844. Her husband died in 1912, at the alleged age of 101.

Mrs. Catherine O'Neill, who died recently at Hartford, Conn., is said to have been born in 1808. She had been a widow since 1854, but always enjoyed excellent health. She is survived by an aged son.

HOSPITAL BEQUEST.—The will of the late Annie Louise Cummings, of Portland, Me., which was filed on March 5, contains a bequest of $5000 to the Maine General Hospital.

NEW YORK.

BETH ISRAEL HOSPITAL ASSOCIATION.—The annual meeting of the Beth Israel Hospital Association was held on Feb. 26, when it was reported that 46,959 cases were treated at the hospital during the year. The total expenditures were $126,522 and the receipts, $114,171, the deficit of $12,351 being made up by the board of directors. The president announced that plans had been made for the construction of a new hospital on a site a little north of the present building (on the lower east side), which is to be 14 stories in height, with provision for 500 beds. The estimated cost is $1,000,000, and of this amount nearly $300,000 has already been subscribed.

TOMBS CITY PRISON.—Many abuses having been brought to light in an investigation of conditions at the Tombs city prison, Deputy Commissioner Lewis of the Department of Correction has recommended a number of important changes in the administration of the institution. Among his recommendations is that steps be taken to establish hospital wards on the top floor of the main building, which will permit the segregation in separate wards of those suffering from tuberculosis, venereal diseases, or the use of norcotic drugs, and which will secure to all inmates decent medical service, which is now made impossible because of the lack of facilities. Another of the recommendations is that a single story building should be erected in the yard space, where visitors may see inmates without congesting the main prison, as at present. and without coming in personal contact with the inmates. This will obviate the present dangerous possibility of escapes through substitution, and also obviate all searches of visitors, which are necessarily more or less obnoxious to them. The commissioner is convinced that drugs will

be smuggled into the prison as long as visitors can come in contact with inmates, and as long as food and beverages may be purchased outside and brought in.

The Milk Situation.—The New York Milk Committee has sent to Governor Glynn a protest against the personnel of the State Milk Commission recently appointed by him, asserting that in the commission, as it now stands, seven of its eleven members really represent the interests, not of the producer or of the consumer, but of the reactionary group of milk dealers and ice cream manufacturers who resent increasing demands of the public and such organizations as the New York Milk Committee for more rigid regulations to safeguard the consumer against impure and disease-laden milk. With the exception of Health Commissioner Biggs and Nathan Straus, no member of the commission, it is stated, is qualified to represent in a disinterested way the best interests of the state from a public health standpoint. The New York Milk Committee has advocated uniform state regulations requiring the pasteurization of all milk except that which is certified and the grading of milk according to bacterial standards and methods of production. It may be recalled that, in order to secure pure milk at a reasonable price for use at the infant milk stations in New York City, the committee organized an experimental company, which for two years conducted a plant at Homer, N. Y., and demonstrated that milk equal in quality to regularly certified milk could be produced and sold at a fair profit for 9 cents a quart.

Registration of Nurses.—A hearing was recently held in Albany upon the two bills, in the senate and assembly respectively, known as the Seeley and Hoff bills, which are identical in their provisions and have the title, "An act to amend the public health law, in relation to the practice of nursing." They are in every respect similar to bills which were killed in the last legislature, having for their object the creation of a high-priced nursing monopoly, for the benefit of a few at the expense of the many. They would debar, under heavy penalties, all persons except "registered nurses" from calling themselves nurses, and are strongly opposed to the public interest, since no provision whatever is made for nurses for persons of moderate means, who comprise over 90% of the population; while instruction for low-priced nurses, which for nearly ten years past has been provided by an admirable and successful institution for the purpose at Albany, is forbidden under penalty of the law. At the hearing, among those who opposed the bills were representatives of no less than thirty-eight large hospitals in New York City, including such institutions as the Roosevelt and St. Luke's Hospitals, and from Albany the superintendent of the large City Hospital.

Current Literature

Medical Record.

February 28, 1914.

1. Stedman, H. R. *The Extradition of Insane Persons.*
2. Clark, L. P. *A Further Study upon Mental Torticollis as a Psychoneurosis.*
3. Mears, J. E. *The Evolution of the Study of Anatomy and Its Important Relation to the Development of Surgical Knowledge.*
4. Balfour, D. C. *The Care of Surgical Patients.*
5. Wallace, R. *The Traumatic Neuroses, Due to Alleged or Actual Injury, from the Medico-legal Standpoint.*
6. Austin, C. K. *Eclampsia, with Total Absence of Albumin but Generalized Hard Edema (Pure Chloride Retention?).*
7. Rahmet, H. *The Causation of Dreams.*
8. Wise, F. *Lichen Planus of the Glans Penis. Its Treatment with Roentgen Rays.*
9. Coburn, R. C. *A Standard Educational Qualification for the Anesthetist.*

New York Medical Journal.

February 21, 1914.

1. Reber, W. *Glaucoma.*
2. Leszynsky, W. M. *Glioma of the Cauda Equina.*
3. Talmey, B. S. *Transvestism.*
4. Baetz, W. G. *Primary Pernicious Anemia.*
5. McMurtrie, D. C. *The Care of Crippled Children in Germany.*
6. LeFever, C. W. *The Eyes of the Neurotic.*
7. Bachmann, R. A. *The Morality of Venereal Prophylaxis.*
8. Sutter, C. C. *Natural Defenses of the Body against Disease.*
9. Macleod, J. J. R. *Recent Work on the Physiological Pathology of Glycosuria.*

February 28, 1914.

1. Duane, A. *Motor Anomalies of the Eye.*
2. *Ware, M. W. *The Futility of Phenolsulphonephthalein as an Indicator of Renal Function.*
3. Harrower, H. R. *The Properties of Parathyroid Extracts.*
4. Roddy, J. A. *The Ross Jelly Film Method in the Diagnosis of Syphilis.*
5. Todd, J. B. *A New Method of Determining the Dust in Air, and Fresh-Air Schoolrooms.*
6. Leavitt, E. J. *Diagnosis of the More Common Diseases of the Rectum and Anus.*
7. Stolaff, V. A. *Surgery in Goitre.*
8. Friedmann, J. *Roentgen Diagnosis.*

9. SEELYE, H. H. *Carbon Disulphide as a Therapeutic Agent.*

2. Ware endeavors to refute the claims made for phenolsulphonephthalein as a functional renal test. He says that the efficiency claimed for the drug because of its complete rapid elimination and its reappearance in an unaltered form cannot bespeak any elaboration in the sense of work done on the part of the kidney, for efficiency means the ratio of useful work to energy expended. The phenolsulphonephthalein test is an acidometric test, but the degree of acidity and kidney function are not necessarily parallel. The information obtained by this test is not precise. [L. D. C.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

FEBRUARY 28, 1914.

1. *PEARCE, R. M. *The Charge of "Human Vivisection" as Presented in Antivivisection Literature.*
2. *PATTERSON, J. *An Economic View of Venereal Infections.*
3. HUNT, J. R. *The Ischemic Lumbago, a Further Contribution to the Lumbar Type of Intermittent Claudication.*
4. TODD, H. C. *The Snare Versus the Sluder Operation in Tonsillectomy.*
5. MACE, L. S. *Chronic Tuberculous Diaphragmatic Pleurisy with Symptoms Resembling Gastric Ulcer.*
6. *PIERSON, R. H. *Epidemic Poliomyelitis and Distemper of Dogs.*
7. VAN COTT, J. M., AND LENTZ, W. *Trichinosis.*
8. COOK, H. W. *Prognostic Value of Slight or Transient Albuminuria, with Special Reference to Life Insurance Examinations.*
9. SINKLER, F. W. *Interlobar Empyema.*
10. *BREITSTEIN, L. I. *Rupture of the Uterus Following Cesarean Section, with a Study of the Uterine Scar.*
11. MCGLANNAN, A. *The Conservative Treatment of Undescended Testicle.*
12. GIBBON, R. L. *Acute Intestinal Obstruction Due to Gall-Stone. Report of Case.*
13. HAZEN, H. H. *Severe Erythema Multiforme with Anaphylaxis Due to Oyster Protein.*
14. CURTIS, A. H. *Vomiting of Pregnancy Treated by Injections of Blood of Normal Pregnant Women.*
15. ALLISON, L. P. *Strangulated Hernia with Gangrene.*
16. O'NEILL, B. J. *A Case of Traumatic Rupture of the Heart.*
17. HANSON, H. B. *Fuchsin Ointment in Tinea Sycosis.*

1. Pearce's paper is a very carefully prepared answer to the popular cry of "Human Vivisection." He shows how utterly unfounded and blind are most of the press or antivivisection journal statements. The paper is one that the laity should have recourse to in order to straighten out their misdirected ideas on this important subject.

2. Patterson's paper on the economic loss due to venereal disease is extremely convincing and should form a base for further efforts towards its control.

6. Pierson finds marked similarity between distemper in dogs and poliomyelitis in children, and writes a very suggestive paper. The subject seems worthy of further careful investigation.

10. Breitstein believes that a Cesareanized woman who gives a history of an infection with a purulent vaginal discharge in the puerperium is a good candidate for rupture of the uterus in one of her subsequent pregnancies. Rupture of a Cesarean scar generally takes place in a scar resulting from improper wound healing because of infection. [E. H. R.]

THE LANCET.

FEBRUARY 7, 1914.

1. *WHITE, W. H. *Glycosuria.*
2. BLAND-SUTTON, J. *On the Treatment of Fractures of the External Malleolus.*
3. *JONES, H. L. *Diathermy, or the Electric Warming of the Tissues of the Body.*
4. ROLLESTON, H. D. *Vaccines from the Standpoint of the Physician.*
5. BASHFORD, E. F. *Fresh Alarms on the Increase of Cancer.*
6. HARMAN, N. B. *An Operation to Improve the Effect of an Artificial Eye.*
7. WHYTE, G. D. *Note on the Fragility of the Red Cells in Conditions Associated with Jaundice.*

1. In this clinical lecture White first considers those diseases which may be accompanied by glycosuria, such as exophthalmic goitre, diseases of the pituitary body, of the adrenals, pancreas, parthyroids, organs of generation, of the nervous system and liver. He then takes up the causation of hyperglycemia and acidosis. Under treatment he considers mild and severe cases as to the use of drugs, diet, etc. The article is full of practical points of value.

3. Jones explains the technic of diathermy, which he calls "the electric warming of the tissues of the body," theorizes as to the method of activity and describes its use and value in such conditions as arterial hypertension, joint affections, sciatica and neuralgia. [J. B. H.]

FEBRUARY 14, 1914.

1. *GRAVES, E. W. H. *Hunterian Lecture on the Experimental Principles of the Operative Treatment of Fractures and Their Clinical Application.*
2. *LUFF, A. D. *Some Common Errors in the Diagnosis and Treatment of Diseases of the Joints.*
3. SYMES-THOMPSON, H. E. *Mitral Stenosis, Cardiac Thrombosis, Aortic Embolism and Gangrene of Both Legs.*
4. RUSS, C. *A New Method of Treating Chronic Cholecystitis and Other Bacterial Infections.*
5. PERCIVAL, A. S. *Errors of Refraction in School Children.*
6. GOMPERTZ, R. *A Case of "Spastic" Constipation.*
7. MACDONALD, W. *Extra-articular Ankylosis of the Inferior Maxilla Due to Foreign Bodies in the Scalp for Ten Years.*
8. GAUNTLETT, E. G. *A Case of Intussusception Treated by Enterectomy.*
9. MORT, S. *Multiple Mesenteric Lipomata Causing Obstruction.*

1. In this first Hunterian lecture, Graves describes certain experimental work in animals on insecure and incomplete as well as efficient fixation of fractures by mechanical means and the problems of sepsis, delayed union, etc., he has met with. He discusses the use of wire, plates, etc.

2. This article is largely based on the discussion of the differential diagnosis of various joint disorders. As such it is of value although presenting nothing new. [J. B. H.]

BRITISH MEDICAL JOURNAL.

FEBRUARY 7, 1914.

1. *PRICE, J. D., AND ROGERS, L. *The Uniform Success of Segregation Measures in Eradicating Kala-azar from Arsam Tea Gardens; Its Bearing on the Probable Mode of Infection.*
2. *DUKE, H. L. *Wild Game as a Reservoir for Human Trypanosomes. An Analysis of the Available Evidence from the Northern Shores of Lake Victoria Nyanza.*

3. *PRENTICE, G. *Sleeping Sickness, Tsetse, and Big Game.*
4. *BAHR, P. H. *A Study of Epidemic Dysentery in the Fiji Islands, with Special Reference to Its Epidemiology and Treatment.*
5. *ARCHIBALD, R. G. *Intestinal Schistosomiasis in the Sudan, with Notes on the Treatment of Two Cases by Means of Autogenous Vaccines of Coli-like Organisms.*
6. *ARNOLD, W. J. J. *The Etiology of Beri-beri.*
7. *NIGHTINGALE, P. A. *Zeism or Pellagra.*
8. WHEELER, W. I. DEC. *Anastomosis of the Vas Deferens.*
9. CHEATLE, G. L. *The Spread of Cancer in the Lower Part of the Large Intestine.*

1-7. These articles deal exclusively with various phases of tropical medicine with special reference to the prevention of the spread of such diseases as kala-azar, sleeping sickness, etc., how the diseases are carried from animals and insects to humans, etc. They are of value to all interested in this branch of medicine. [J. B. H.]

FEBRUARY 14, 1914.

1. *BALLANTYNE, J. W. *The Nature of Pregnancy and Its Practical Bearings.*
2. *ROUTH, A. *Ante-natal Hygiene, Its Influence upon Infantile Mortality.*
3. PENFOLD, W. J. *A Method of Producing Rapid and Fatal Intoxication with Bacterial Products.*
4. MAMOURIAN, M. *The Radical Cure of Procidentia Uteri in Elderly Women.*

1. In an interesting article, but one which hardly lends itself to review, Ballantyne discusses pregnancy from various points of view. He speaks of the three theories in regard to it: First, that the embryo is a parasite living on the mother and making certain definite demands of the maternal organism; second, the pathological concept that pregnancy is a nine-months' disease from which the mother is suffering; and third, the view of those who regard pregnancy as a harmonious symbiosis, that the child is a part of the mother and that there is a certain amount of give and take on each side. He discusses the maternal response to pregnancy; that pregnancy is physiology at high pressure. He considers pregnancy and life insurance, the biological test for pregnancy, the etiology of the various maladies of pregnancy, its place in the medical curriculum, pre-maternity wards and ante-natal pathology. He briefly takes up pregnancy and its relation to legislation, eugenic feminism and politics.

2. Routh discusses the causes of ante-natal disease and death. Among the paternal causes he mentions syphilis and tuberculosis; among the maternal causes he includes: (*a*) pathological, such as malnutrition, acute and chronic diseases, tropical diseases and toxemias, (*b*) mechanical causes, and (*c*) miscellaneous causes, such as hemorrhage, etc. Among the fetal causes he includes: (*a*) developmental, (*b*) pathological, (*c*) mechanical. To meet and relieve these causes he discusses remedies under three heads: (1) philanthropic, (2) legislative, and (3) medical. He dwells at length on these headings. The article is of great interest and value. [J. B. H.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

No. 5. FEBRUARY 3, 1914.

1. *DÖDERLEIN, A., AND V. SEUFFERT, E. *The Mesothorium Treatment of Cancer.*
2. HENKEL, M. *The Treatment of Cancer of the Uterus by Rays.*
3. *SCHOTTMÜLLER. *Jaundice in Pregnancy and Extra-uterine Pregnancy.*
4. ABDERHALDEN, E. *The Dialysis Method in Clinical and Biological Problems.*
5. PLAUT, F. *Absorption in Abderhalden's Dialysis Method.*
6. PRETI, L. *Precipitation of Blood Serum by Lipoids from the Tubercle Bacillus.*
7. MAYER, M. *The Emetin Treatment of Dysentery.*
8. *MAYER. *Pathogenic and Non-pathogenic Organisms of the Intestinal Tract.*
9. PHILIP, C. *How Many Syphilitics are Sufficiently Treated?*
10. SPOORL. *Inguinal Pain in Young Men.*
11. HIRSCHFELD, L., AND KLINGER, R. *Endemic Goitre.*
12. WEBER, F. *Tamponade in Obstetrics and Gynecology. (Conclusion.)*
13. SCHRÖDER, H. *Second Sight.*
14. ERNST, P. *Edwin Klebs.*

1. To be reviewed in the next number.

3. Schottmüller recognizes that jaundice is a not infrequent complication of pregnancy. It may be of catarrhal nature, or due to pressure on the bile passages by the enlarging uterus or may be infectious or hemolytic. In extra-uterine pregnancy with bleeding into the peritoneal cavity, there occurs another kind of jaundice which is not hepatogenic. This is due to the absorption of blood elements from the peritoneum. It is recognized by spectroscopic examination of the blood, which shows the presence of hematin. Schottmüller therefore believes that the presence of hematin in blood is a valuable clinical sign of extra-uterine pregnancy and that jaundice from this cause is an important clinical symptom.

8. Mayer has cultured the stools from 5719 soldiers. In only three cases were pathogenic bacteria found. He concludes that healthy individuals in healthy communities are rarely the carriers of infection. To prevent diseases acquired through the intestinal canal, he advises the avoidance of foods which may contain germs, and insists on clean streets, drinking water, clean houses and clean hands as the best kinds of general prophylactic measures. [R. F.]

No. 6. FEBRUARY 10, 1914.

1. CURSCHMANN, H. *"Bronchotetany" of Adults and Its Treatment with Calcium.*
2. SEHRT, E. *The Thyroid Treatment of Hemorrhagic Metropathies.*
3. TIUNECK, C. *Pulsation in the Clavicular Arteries as a Sign of Sclerosis of the Thoracic Aorta.*
4. WERMEL, S. *Changes in Blood or Serum after X-ray Exposure.*
5. VERAGRUTH, O., AND SEYDERHELM, R. *The Effect of a New Procedure on an Abnormal Leucocyte Picture. (Third communication.)*
6. *SCHNEIDER, W. *The Blood in Whooping Cough.*
7. JAENISCH, H. *The Recognition of Anthrax.*
8. GILBERT, W. *Intra-ocular Tuberculosis.*
9. FUCHS, A., AND FREMD, A. *Proteolytic Protective Ferments in the Serum of Psychiatrical Patients.*
10. RICHTER, G. *Movements of the Chest and Intercostal Spaces in Diseases of the Pleura.*
11. *DÖDERLEIN, A., AND V. SEUFFERT, E. *The Mesothorium Treatment of Cancer. (Conclusion.)*

6. Schneider has made blood counts in 30 cases of whooping cough occurring in children of different ages. As a rule, up to the third week of the disease there is a leucocytosis of at least 27,000, becoming as high as 86,000 in complicated cases. During the first four weeks a relative lymphocytosis is found, varying between 58-63% of the white cells, while large mononuclear cells and transitional cells are only slightly increased. This blood picture is characteristic for whooping cough. The degree of leucocytosis, however, affords no prognostic information.

11. Döderlein and V. Seuffert have treated 180 cases of malignant disease with mesothorium. In this paper they give a careful analysis of their methods and results. They believe that mesothorium is a

good therapeutic agent in certain kinds of disease, and feel that further progress in its use can be made only by more confirmation by others. [R. F.]

BERLINER KLINISCHE WOCHENSCHRIFT.

No. 1. JANUARY 5, 1914.

1. GOLDSCHEIDER. *Kidney Lesions Resulting from Accidents.*
2. CHIARI. *Perforation of the Aorta by Foreign Bodies in the Esophagus.*
3. *v. HAUSEMANN. *A Working Hypothesis for the Investigation of Leukemia.*
4. *KLOSE. *Progress and Changes in the Surgical Treatment of Exophthalmic Goitre.*
5. DREYER. *Exploratory Trephining of the Skull in Several Places at One Operation.*
6. HEIMANN. *Mesothorium and the Roentgen-ray in Carcinoma of the Uterus.*
7. PELTESOHN. *An Unusual Case of Hip Dislocation in a Mongolian Idiot.*
8. STADLER. *The Treatment of Tetanus with Magnesium Sulphate.*
9. SIBER. *A Case of Primary Formation of Gallstones in the Liver.*
10. HELLER. *Acute Inflammation of the Paradidymis.*
11. URY. *The Use of Arsenic Triferrol in Diseases of the Stomach.*
12. VON OY. *Experiences with the Albuminate of Tricalcium-phosphate ("Tricalcol").*

3. The author advances the theory that leukemia may be a secondary or tertiary manifestation of some antecedent disease, just as there are secondary and tertiary lesions of syphilis. He has no data or proofs, but merely suggests that all cases of leukemia be subjected to an exhaustive questioning on the past history, to see if any one pathological process appears consistently in these histories. He thinks that possibly valuable light may be thrown on the subject in this way.

4. Klose in this article takes up the importance which the thymus has come to assume in Basedow's disease, and the definitely recognized deaths which have occurred after operation as a result of either pressure or intoxication from a pathological thymus. He classes all cases of Basedow's disease into: (1) those showing primary involvement of the thyroid with slight or no involvement of the thymus, (2) those in which the two glands are similarly diseased, and (3) the rare cases where the thymus alone is accountable for the symptoms. Correct diagnosis in the last two groups is difficult even with the best hospital facilities—indeed it is often impossible. During the last two years at the Frankfort clinic they have removed the thymus wholly or in part in every case in which it was suspected of being involved in the process, with startling results. Up to 1911 there were 130 operations with 8 "thymus deaths"—in 1912 and 1913 there were 200 operations with no deaths. The removal of the thymus was in addition to the thyroidectomy. The operation was always done under local anesthesia if possible, and the thymus was removed by enucleation within its capsule. [R. H. M.]

No. 2. JANUARY 12, 1914.

1. COENER. *Traumatic Cortical Epilepsy from a Bullet Wound. Cure by Fascia Transplantation.*
2. NEARX. *Air-ship Catastrophies and Injuries.*
3. *WECKOWSKI. *The Radium Treatment of Malignant Tumors.*
4. SIMON. *The Treatment of Inoperable Tumors.*
5. *KUZNITZKY. *Mesothorium in Carcinoma of the Skin and Other Organs.*
6. CENMANN. *The Rôle of Contact Infection in the Spread of Cholera in Servia in 1913.*
7. CEDERBERG. *On the Theory of Scarlet Fever.*
8. WOLF AND GUTMANN. *The Influence of Diet on the Sugar Content of the Blood in Diabetics.*
9. BENDA. *A Case of Feminine External Hermaphroditism.*
10. BRUHNS. *On the Diagnostic Value of the Gonococcus Vaccine.*
11. RADOS. *Experimental Results in the Causation of Choked Disc.*
12. BUCKY. *The Technic of the Application of Diathermic Treatment.*
13. GÖRGES. *Observations on Soluble Aspirin (Aspirin-Löslich).*

3. Werkowski has studied this subject exhaustively; he reports several cases, and concludes: (1) that radium and mesothorium have a marked destructive influence on carcinomatous tissue, different from any other substance yet discovered; (2) that growths which are resistant to the Roentgen ray are often influenced by radium; (3) that the most important factors for success are the amount of the radio-active substance used, the filtration, and the proper regulation of the distance between the radium and the carcinoma.

5. The author reports 74 cases of carcinoma of the skin treated with mesothorium, with the following results:—

Thirty-three cases were clinically cured, showing, at the time of the report, clean scars at the site of the disease, with no evidence of malignant infiltration.

Three cases which had recurrences after treatment were subjected again to the mesothorium and were clinically cured.

Four cases were refractory and showed no improvement.

Twenty cases were still undergoing treatment and no definite report could be given.

Fourteen cases were lost sight of, and were not available for this report.

The results with deep-seated inoperable tumors were much less satisfactory. [R. H. M.]

ARCHIV FÜR KLINISCHE CHIRURGIE.

VOL. 103. PART 1.

1. HÄRTEL, F., AND KEPPLER, W. *Experiences with Kulenkampff's Brachial Plexus Anesthesia, Particularly as Regards the Appearances During and Afterwards.*
2. *WOSSIDLO, E. *Experimental Studies in the Use of Collargol in the Renal Pelvis.*
3. EDEN, R. *The Surgical Treatment of Pulmonary Tuberculosis, Especially That Obtained by Collapse.*
4. JANKOWSKI, J. *Operative Treatment of Peritonitis Due to Perforation of Gastric or Duodenal Ulcer.*
5. TAKANO, W. *Carcinoma Sarcomatodes of the Breast.*
6. CALLEY, F. *The Question of the Hereditary Nature of Inflammation of the Appendix.*
7. BERESUEGOWSKY, N. *Intravenous Hedonal Narcosis.*
8. MATTI, H. *Normal Method of Operating upon Goitre of the Base of the Tongue.*
9. MAGNUS, G. *Answer to the Article by Christen upon "The Mechanics of Nail Extension."*

2. Wossidlo made numerous experiments upon dogs for the sake of determining the amount of damage done to kidneys by the injection of collargol, as it is used in pyelography. He found that when collargol is injected into the normal, uninjured pelvis in amounts no greater than the capacity of the pelvis, none of the silver enters the kidney proper or the tissues about the pelvis. If the amount injected is in-

creased beyond the normal capacity of the pelvis, collargol escapes into the peripelvic tissues and spreads over the surface of the kidney beneath the capsule. If the lining of the pelvis is injured, as by the ureteral catheter, the collargol, if under pressure, escapes into the interstitial tissues beside the blood-vessels and between the tubules, and by way of these interstitial spaces may pass into the spaces of Bowman's capsule in the glomeruli. In hydronephrosis, the collargol passes into the collecting tubules much more than in the normal kidney. Infarcted kidneys take up the collargol when it is under pressure, but only in their healthy portions. The infarcted area remains free. From these experiments Wossidlo advises never distending the pelvis beyond its capacity; in hydronephrosis, put in only as much collargol as there is residual urine. If there is primary bleeding, as is often found with stone, tuberculosis or tumor, do not use collargol; if there is secondary bleeding due to injury from catheterization, be careful to underdistend rather than overdistend the pelvis. He concludes by saying that his experiments were not very satisfactory, but he hopes to present a more complete study in the near future. [G. C. S.]

Annales De L'Institut Pasteur.

November 25, 1913.

1. *Metchnikoff, E. *Studies upon Intestinal Flora.*
2. Lina, and Luzzani, N. *Diagnosis of Rabies by Demonstration of the Specific Parasite.*
3. Levaditi, C., and Mutermilch, St. *Antibodies and Animal Species.*
4. Leger, M., and Bouilliez, M. *Experimental Study of the Plasmodium Enui of Halberstädter and Prowazek in a Macacus Cynomalgus.*
5. Pettit, A. *Observations upon the Ichthyosporidium and upon the Malady Which It Provokes in the Trout.*
6. *Besredka, A., and Jupille, F. *Egg Bouillon.*
7. Bujwid, O. *Employment of Virus Regenerated by Transmission in the Treatment of Rabies.*

1. In this article Metchinkoff reports the results of further experiments with the products of intestinal putrefaction. In former work his associates have claimed that indol and paracresol have produced sclerotic lesions in organs and vessels of animals. In this report he shows that the potassium sulphate of these bodies has a toxic action for animals and then he claims that in addition to producing sclerotic lesions these substances are toxic even after combination with body salts. He simply states that therefore another proof is added to the claim that bacterial action against the organisms which produce these substances is justifiable.

6. In a medium which Besredka and Jupille prepared during their studies on anaphylaxis they have had excellent results in growing practically all the organisms, which they have tried out. They have grown better than on the usual media employed for such purposes the pneumococcus, meningococcus, streptococcus, gonococcus, typhoid bacillus, paratyphoid, colon, melitensis, cholera vibrios, diphtheria bacillus, cholera in chicken bacillus, tetanus bacillus and bacillus prodigiosus. The organisms grow more rapidly and preserve their vitality longer. The medium is made as follows:

Egg white (diluted 1:10) .....4 parts
Egg yolk (diluted 1:10) .....1 part
Ordinary bouillon .....5 parts

[C. F., Jr.]

December 25, 1913.

1. Javillier, M. *Investigations upon the Substitution for Zinc of Different Chemical Elements for the Culture of Aspergillus Niger.*
2. *Luzzani, L. N. *Diagnosis of Rabies by the Demonstration of the Specific Parasite, Based upon Ten Years' Experience.*
3. Wollman, E. *Investigations upon the Origin of Alexine and Its Presence in the Circulating Blood.*
4. Rubinsten, M. *Investigations upon the Antipeptic Power of Serum.*
5. Mazé. *Investigations upon Vegetable Physiology.*

2. In reviewing her work, and that of other investigators during the past ten years, Dr. Luzzani reports as follows in regard to her feelings concerning the value of making a diagnosis of rabies by demonstration of the specific parasite, namely the negri bodies:—

The demonstration of the specific parasite discovered by Dr. A. Negri furnishes the surest and quickest method for making a diagnosis of rabies, not only in the dog, but in all other animals susceptible to the disease. The hippocampus major is that part of the brain in which the parasites are most numerous. At this point the forms are more developed and appear earlier in the disease. However, if this part of the brain cannot be obtained, a diagnosis is possible from examination of the other parts of the central nervous system. The author favors the examination in the fresh state after breaking up the tissue. If this fails, the staining method of Mann upon Zenhu fixed material is the best. A positive finding of negri bodies settles the diagnosis, but if the histological study is negative, an experimental inoculation is advisable.

[C. F., Jr.]

Bullettino delle Scienze Mediche.

May, 1913.

1. *Longo, C. *The Action of Sodium Chloride on Normal and Pathologic Kidneys.* (*Conclusion.*)

1. In this exhaustive continued article, Longo reports clinical observations on two cases of hemorrhagic, one of chronic interstitial, and one of chronic parenchymatous nephritis, and laboratory results from four series of animal experiments with uranium nephritis, from which he reaches the following conclusions relative to the importance of sodium chloride in the dietetic regimen of nephritics.

(*a*) The moderate and protracted use of sodium chloride has an irritating action on normal kidneys.

(*b*) This action is greater in nephritic kidneys.

(*c*) A systematic, properly watched, and regularly applied dechloridized regimen for nephritics is the most rational and presents no inconveniences or special contra-indications.

(*d*) The ordinary regimen, containing the ordinary quantity of supplementary salt cannot be tolerated by any nephritic, acute or chronic.

(*e*) In chronic nephritides with chloremic syndromes the sodium chloride exchange is notably altered.

(*f*) There is a parallelism between retention of chlorides and appearance of edema in nephritics.

(*g*) The milk regimen cannot be given to all nephritics, with impunity.

(*h*) Demineralization of food in the uranium nephritides has notable advantages.

(*i*) Clinically and experimentally, the subtraction of chlorides from the food, even if prolonged, does not cause in nephritics any disturbance of the nitrogen exchange.

(*j*) Only on the guide of the balance of chlorides, respecting the special eliminating function of the kidneys for these salts, can be fixed the opportune grade of the hypochloridized regimen.

[R. M. G.]

Miscellany.

NOTICES

THE CUTTER LECTURES ON PREVENTIVE MEDICINE AND HYGIENE. I. By Charles V. Chapin, M.D., Superintendent of Health, Providence, R. I., on "Municipal Sanitation."

Friday, March 20, "Science and Sanitation"

Friday, March 27, "Efficiency of Public Health Measures."

Thursday, April 2, "Organization of the Health Department."

Thursday, April 9, "Research and Publicity."

Thursday, April 16, "Nuisance Problems."

Thursday, April 30, "Contagious Disease Problems."

II. By Cressy L. Wilbur, M.D., Chief Statistician, Bureau of the Census, Department of Commerce on "Vital Statistics in Massachusetts and the United States," Wednesday, March 25, and Thursday, March 26.

Harvard Medical School, Amphitheatre Building A, at 5 p. m.

These lectures are given annually under the terms of a bequest from John Clarence Cutter, whose will provided that the lectures so given should be styled the Cutter Lectures on Preventive Medicine, and that they should be delivered in Boston, and be free to the medical profession and the press.

The members of all classes in the Medical School, the medical profession, the press, and others interested are cordially invited to attend.

MASSACHUSETTS GENERAL HOSPITAL.—A surgical meeting open to the medical profession will be held at 8.15 p. m., on March 27, in the lower amphitheatre of the Out-patient Department. Entrance on either Blossom or Fruit Streets.

Dr. W. J. Mixter will present a "Report on Cranial Surgery at the Hospital since 1901."

Dr. E. P. Richardson will present a "Report on Operation for Hemorrhoids at the Hospital since 1901."

Dr. T. W. Harmer will present a paper on "Mixed Toxins (Coley) in Certain Cases of Sarcoma."

UNITED STATES CIVIL-SERVICE EXAMINATION.

MEDICAL INTERNE.

GOVERNMENT HOSPITAL FOR THE INSANE.

April 8 1914.

The United States Civil Service Commission announces that senior students of reputable medical colleges will be admitted to the open competitive examination for medical interne in the Government Hospital for the Insane, to be held on April 8, 1914, upon filing applications showing them to be otherwise eligible; but in the event they attain an eligible average in the examination their names will not be entered upon the eligible register until they have furnished proof of actual graduation from such colleges.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A meeting of the Society will be held in Sprague Hall, Medical Library Building, on Monday, March 23, 1914, at 8.15 p. m.

Addresses:

"Horse Asthma in its Relation to the Administration of Diphtheria Antitoxin," Dr. Joseph L. Goodale.

"Remarks on the Work and Theories of Dr. S. Weir Mitchell," Dr. James J. Putnam.

After the addresses there will be an informal discussion of the activities and future of the Society, in order to obtain an expression of opinion as to its policy. A full attendance of members is therefore earnestly desired.

E. W. TAYLOR, M.D., *President.*
ROBERT M. GREEN, M.D., *Secretary.*

AMERICAN SOCIETY FOR THE CONTROL OF CANCER.—The American Society for the Control of Cancer has made arrangements for a special meeting on cancer to the held at the New York Academy of Medicine, 17 West 43d Street, on Friday evening, April 10, 1914, at 8.30 p. m. This date has been selected in order that physicians and surgeons attending the Congress of the American Surgical Association may conveniently be present. The public is also invited.

Dr. William J. Mayo, of Rochester, Minnesota, President of the American Surgical Association and Frederick L. Hoffman, LL.D., statistician of the Prudential Insurance Company will discuss the problem of cancer and its control. Dr. Francis Carter Wood, Director of the George Crocker Research Laboratory will describe the investigation of cancer which has been undertaken there under the auspices of Columbia University. Dr. J. Collins Warren of Boston, Professor Emeritus of Harvard University, and President of the Harvard Cancer Commission, will give an account of the estblishment of that commission and the research work which it is directing at the Collis P. Huntington Memorial Hospital, and the Harvard Medical School.

THE BOSTON SOCIETY OF MEDICAL SCIENCES.—The next meeting will be held on Tuesday evening, March 24, 1914, in the Out-patient amphitheatre of the Massasetts General Hospital, at 8.15 o'clock.

The meeting will be conducted by the Staff of the Massachusetts General Hospital.

Papers will be presented as follows:

Dr. Otto Folin and Dr. W. Denis: "Some New Chemical Methods for the Clinical Examination of Urine." (15 minutes.)

Dr. J. H. Means: "Study of Blood Acidity by the Method of Barcroft." (15 minutes.)

Dr. J. H. Pratt: "State of the Vaso-motor Mechanism in Diphtheria Intoxication." (10 minutes.)

Dr. L. H. Newburgh: "State of the Vaso-motor Mechanism in Pneumonia." (15 minutes.)

THOMAS ORDWAY, *Secretary and Treasurer,*
Harvard Medical School.

RECENT DEATHS.

DR. EMILY H. SAWYER, who died recently in West Somerville, Mass., was born at Girard, Pa. She studied at the Boston College of Physicians and Surgeons, and for thirty years had practised her profession in Somerville. She was a widow.

DR. FRANCIS M. BURKE, of Brooklyn, N. Y., a graduate of the medical department of New York University in 1890, died on March 3, at the age of 53.

DR. HUBERT NICHOLS, of Brooklyn, N. Y., a graduate of Bellevue Hospital Medical College in 1891, died on March 9, at the age of 49.

DR. WILLIAM C. MONROE, who died on March 11, at Woonsocket, R. I., was born in 1849. He received the degree of M.D. in 1876 from Bellevue Medical College. He was chief of staff and chairman of the medical board of the Woonsocket Hospital, a member of the Rhode Island Medical Society and first president of the Woonsocket District Medical Association.

DR. JOHN LAING LEAL, who died on March 14 in Paterson, N. J., was born in Andes, N.Y., in 1858. He received the degree of A.B. in 1880 from Princeton, and in 1884 that of M.D. from the College of Physicians and Surgeons of New York. In 1888 he settled in the practise of his profession at Paterson, where he became an expert on sanitation, and was for many years president of the local board of health. He was consulting surgeon for the Paterson General Hospital and examiner in the School of Hygiene of Rutgers College, and president of the New Jersey State Sanitary Association.